The Journal of the
American Medical Association
Published Under the Auspices of the Board of Trustees

Vol. 135, No. 1 CHICAGO, ILLINOIS SEPTEMBER 6, 1947
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FRACTURE OF THE OLECRANON PROCESS OF THE ULNA

Treatment by Excision of Fragment and Repair of Triceps Tendon

Chairman's Address

FRANCIS M. McKEEVER, M.D.
Los Angeles
and
RONALD M. BUCK, M.D.
St. Joseph, Mo.

Fracture of the olecranon process of the ulna not infrequently results in some degree of loss of flexion and extension of the elbow joint. Particularly is this so in elderly persons and in patients subjected to long immobilization with the elbow in extension. So prolonged is the recovery from treatment by immobilization in extension that this treatment has been almost abandoned. Open reduction and fixation of the fractured fragment to the shaft of the ulna in order to permit early mobilization of the elbow has superseded the closed method of treatment. Many different types of suture, including catgut, wire and fascia, have been advised and many ingenious screws for fixation of the olecranon fragment have been devised.

Even with these types of treatment, which permit relatively early mobilization of the joint, some loss of motion is the rule in the older patient, and is not infrequent in younger patients. After suture, with whatever material it is accomplished, the complication of separation of the fragments due to rupture of the retention suture is not uncommon. Even though the suture remains intact, the olecranon fragment too often tilts a little, resulting in an incongruous articular surface which eventually causes a traumatic arthritis of the elbow joint. Extensively comminuted fractures of the olecranon do not lend themselves well to any type of internal fixation, and a congruous joint surface cannot be restored.

Removal of the fractured fragment of the olecranon does away with the necessity for the healing of a fracture, which is time consuming and necessitates long immobilization in a joint which does not tolerate fixation well. It obviates the necessity to heal a bone and substitutes only the necessity to heal fascia, thus shortening the time of fixation of the joint. It also obviates the chance for an incongruous articular surface.

Excision of the fractured fragment is not applicable before the completion of bone growth. It should not be done in those rare instances in childhood and adolescence in which the upper epiphysis of the ulna is separated from the shaft, as a growth disturbance is certain to result. Any fragment with an epiphysis attached should be replaced.

Excision of the fractured fragment in treatment of fractures of the olecranon has not received prominence in the literature. In 1918 Foille[1] reported the treatment of 1 patient by this method. Although we are certain that this type of treatment has been employed by many surgeons in the United States, there are no reported series in the literature from this country. Dunn[2] in England in 1937 reported 2 cases in which he employed this type of treatment and stated that the early return of good function was so striking that he had performed his last suture of the fragments. Wainwright[3] in 1942 reported the end results of 20 fractures of the olecranon treated by this method and felt it superior to attempts to effect union in older persons and in comminuted fractures. He also felt it acceptable in young persons when hasty return to work was necessary.

Our purpose in this paper is (1) to present the end results of treatment of fractures of the olecranon process of the ulna by total excision of the fractured fragment in 10 patients, (2) to enumerate the indications for this type of treatment and (3) to present a technic for excision of the olecranon process and repair of the triceps tendon.

Excision of the olecranon process was performed on 7 patients with old ununited fractures of the olecranon. Five of these patients had previously had an open reduction and fixation of the fragments with a wire loop. In 2 of these patients the wire loop had ruptured with separation of the fragments and in 3 the wire loop had stretched enough to permit a hiatus between the fragments with a nonunion. Two patients who had suffered compound fractures had been debrided and immobilized without any internal fixation. All had a complete nonunion and an incongruous articular surface. The excision of the fragment was carried out on an average of seven and one-half months after the original injury in these patients. The shortest interval between the injury and excision of the fragment was five months, and the longest interval was thirteen months. All patients prior to excision of the fragment complained of pain and all presented restriction of

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Read before the Section on Orthopedic Surgery at the Ninety-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., June 12, 1947.

[1] Foille: Gunshot Fracture of Olecranon Treated by Removal, Marseille méd., 1918.

[2] Dunn, N.: Operation for Fracture of Olecranon, Brit. M. J. **1**: 214 (Feb. 4) 1939.

[3] Wainwright, D.: Fracture of Olecranon Process, Brit. J. Surg. **29**: 403-406 (April) 1942.

motion in the elbow joint. The average restriction of flexion of the elbow in these 7 patients was 38 degrees. One patient had a restriction of flexion of 55 degrees, and 1 had lost only 10 degrees of flexion. The average loss of extension in these 7 elbows was 28 degrees. One patient had lost no extension, and the greatest loss of extension was 60 degrees.

In all patients subjected to this procedure there was a decrease in the subjective complaint of pain after the operation. All patients had an increase in the range of motion of the elbow joint as a result of the operation. The average improvement in motion in these 7 patients was 57 degrees. The greatest improvement in motion was in a patient who obtained an increase of 90 degrees, gaining 50 degrees in flexion and 40 degrees in extension. The least improved patient was a person who gained only 10 degrees of motion. This patient had, however, only a 10 degree restriction of flexion to start with and regained normal flexion with a relief of pain and improvement in strength.

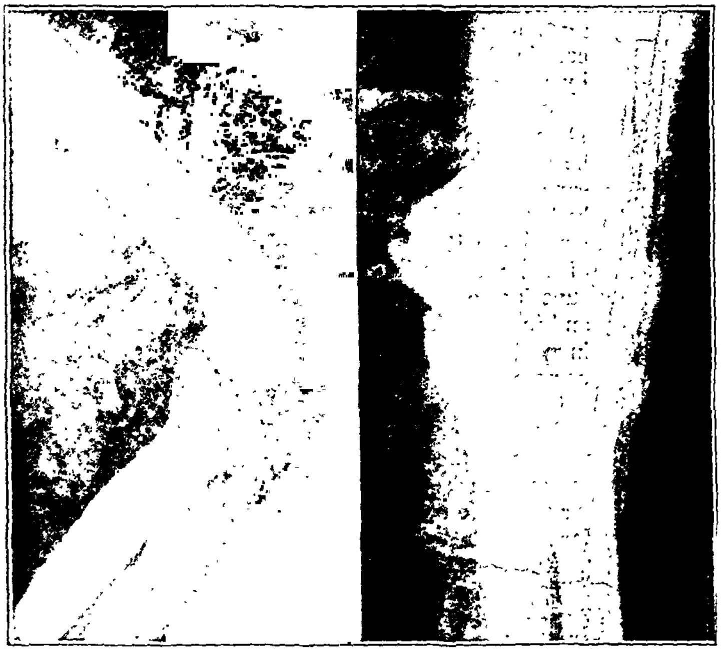

Fig. 1 (W.G.).—Postoperative appearance after removal of fragments and tricepsplasty.

The gain in motion after operation, moreover, was rapid. In all instances 60 to 70 per cent of the restored motion resulted in the first sixty days after operation.

Three of these patients had normal strength in the triceps muscle and were able to do push-ups from the floor. Four patients lost some strength in the ability to extend the elbow against resistance. The greatest loss of triceps power amounted to 25 per cent, which would be disabling only for prolonged, repeated overhead lifting.

Three patients felt that they traumatized their ulnar nerve, or "bumped their crazy bone," easier than before the excision of the olecranon. The other four noticed no tendency to strike the "crazy bone." None had any subjective or objective neurologic complaints referable to the ulnar nerve distribution in the hand. It is probable that the anterior transposition of the ulnar nerve should be done at the time of excision of the olecranon. This can be easily carried out, as the nerve should be isolated at the time of the excision and tricepsplasty.

One patient with a large fragment broken out of the olecranon process, which did not enter the trochlear (semilunar) notch, was treated by excision of the fragment and repair of the rent in the triceps tendon. This patient promptly, within four weeks, regained a normal range of motion in the elbow joint. This type of fracture should always be treated by excision of the fragment. Such fragments are prone to nonunion and remain loose and painful.

One patient, who suffered a severely comminuted fracture of the olecranon process, caused by severe direct trauma to the joint, was treated by excision of the comminuted fragments and repair of the tendon. The fragments which were removed comprised 70 per cent of the trochlear (semilunar) notch. Because of infected lacerations on the skin, resulting at the time of injury, excision of the fragments had to be delayed for seven weeks, until the skin healed and no longer carried the danger of infecting the elbow joint. During these seven weeks the elbow was immobilized except for dressings. At operation there was advanced organization of the comminuted fragments, and any attempt at suture was impossible. Six months after excision of the fragments and repair of the triceps tendon the patient had 110 degrees of motion in the elbow joint. He was restricted only 5 degrees in flexion and 25 degrees in extension. There was no weakness in the triceps muscle, the patient being able to do push-ups from the floor. He had no complaints referable to the ulnar nerve (figs. 1, 2, 3 and 4).

In 1 patient, a housemaid aged 60, an acute fracture of the olecranon process was treated by excision of the fragment and repair of the tendon. In this patient the fragment comprised one half of the trochlear (semilunar) notch of the ulna. Sixty days after the operation the patient returned to her duties as a maid and had 110 degrees of motion in the elbow. Six months after the excision of the fragment, she had a normal range of flexion and extension in the elbow joint, normal strength in the triceps muscle and no complaints.

Instability of the elbow joint does not result from this procedure as long as the coronoid process and the vertical distal face of the trochlear (semilunar) notch of the ulna remain. Stability of the elbow joint is dependent on the coronoid process and the distal vertical face of the ulna, the lateral ligaments of the joint and the function of the biceps, brachialis and triceps muscles. If the fracture of the ulna is distal to the coronoid process the fragment should not be excised. Removal of a fragment of this size amounts to a partial resection of the elbow joint. When the fracture is proximal to the coronoid process, a fragment which constitutes 80 per cent of the trochlear (semilunar) notch of the ulna may be excised and result in absolutely no loss in the stability of the elbow joint.

TECHNIC OF OPERATION

A curved skin incision, starting on the forearm 10 cm. below the tip of the olecranon and extending 10 cm. up the arm from the tip of the olecranon, is made through the skin and fascia. The incision is made to deviate to the medial side of the olecranon process. The skin and subcutaneous tissue on the posterior aspect of the elbow are reflected widely to the medial and lateral sides to give good exposure of the condyles of the humerus. The ulnar nerve is isolated and freed adequately to permit of its transposition to the front of the medial epicondyle of the humerus. The nerve is protected throughout the operation.

This exposes, in the arm portion of the incision the lower tendinous portion of the triceps and medially some of its muscle fibers. On the lateral side the border of the triceps and the fibers of the extensor carpi radialis muscle are in view. In the lower or forearm portion of the incision the tricipital aponeurosis and the fibers of the origin of the flexor carpi ulnaris are exposed. On the lateral side the tricipital aponeurosis blends with the dense fascia covering the anconeus.

Starting over the ulna, 2 to 3 cm. distal to the fracture line through the olecranon process, a tongue of fascia, aponeurosis and periosteum of the ulna is cut with a sharp knife. The end of this tongue should be 3 to 3.5 cm. wide. The lateral margin of this tongue is cut through the fascia covering the anconeus and as far proximally as the fibers of the extensor carpi radialis. The medial side of the tongue is cut through the tendinous portion of the triceps to the point where it deviates laterally and then extends 2 cm. into the muscle fibers. The tongue is freed by pushing the periosteum off the ulna with a sharp elevator up to the point of fracture. Any remaining attachments of the sides of the tongue are then freed by sharp dissection. This permits the tongue to be turned over on itself with the fractured fragment, or fragments, attached to it and completely exposed. The humeral surface of the elbow joint is also widely exposed so that any fragments of abraded articular cartilage on the trochlear and capitellum may be removed.

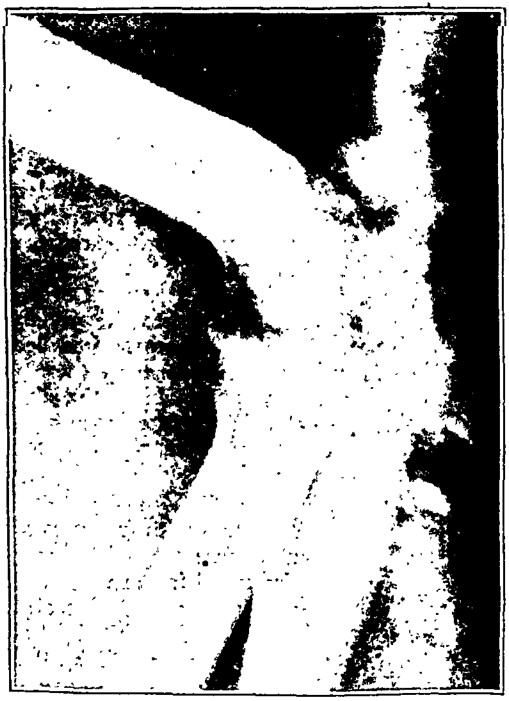

Fig. 2.—Preoperative appearance of extensively comminuted fracture of olecranon in patient W. G.

The fractured fragment is then removed from the tongue of aponeurosis by sharp dissection with a knife, cutting close to bone. If this is done carefully, the aponeurosis will not be buttonholed. In fresh fractures there may already be a large rent in the aponeurosis. In old ununited fractures there is a thick, dense band of scar completely covering the fragment, and the fractured piece of bone can be easily removed without perforating the tongue. This leaves a dense fibrous tongue of aponeurosis which can, by gentle traction, be stretched as much as 1.5 cm., owing to the fact that its sides extend into muscle fibers and the free lateral border of the triceps. The proximal end of the ulna is then smoothed by removing any sharp spicules which may project from its cortex.

Fig. 3 (W. G.).—Range of motion in flexion and extension of elbow six months after excision of fragments and tricepsplasty.

The edge of the periosteum of the ulna from which the tongue has been released is then elevated enough to create an edge to which the aponeurotic tongue may be sutured. If desired, the periosteum of the ulna may be incised 1 or 2 cm. distal to its proximal edge, thus creating a tunnel to pass the end of the tongue beneath.

With the elbow extended, gentle traction is made on the tongue, which causes it to slide in relation to the lateral and medial structures from which it has been separated. A few sutures of number 0 chromic catgut passed through the sides of the tongue while it is held under tension, into the lateral and medial fascial structures from which it was freed, tend to hold it stretched and reduce the muscle pull of the triceps.

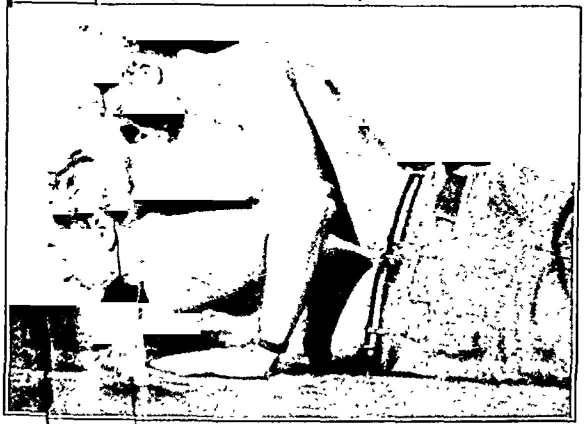

Fig. 4 (W. G.).—Elbow during push-ups, showing preservation of triceps power.

The distal end of the tongue is then sutured about its periphery to the elevated proximal end of the periosteum and fascia over the ulna, with interrupted sutures of number 0 chromic catgut. It may be overlapped and imbricated. If a tunnel of periosteum has been created it is passed under the tunnel and sutured to the periosteum and fascia distal to the tunnel, and

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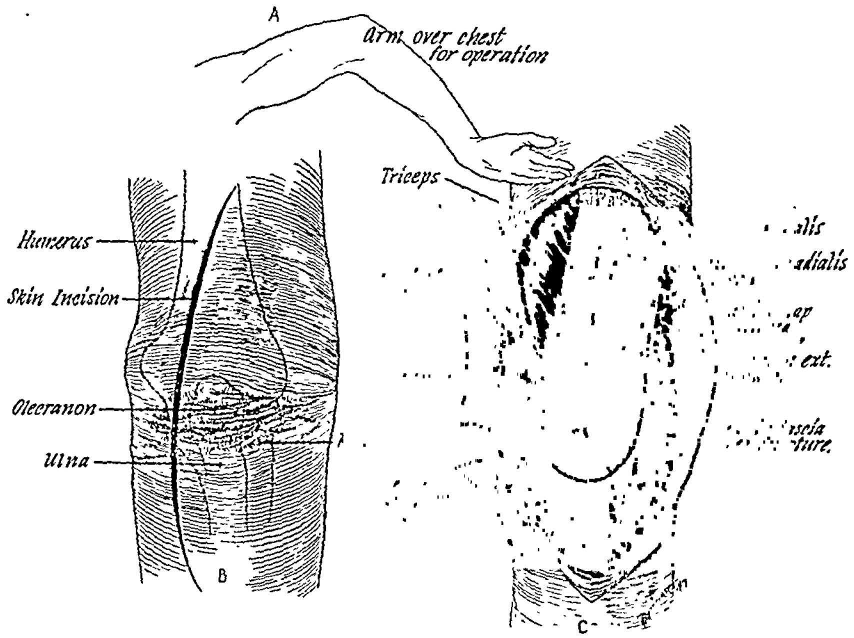

Fig. 5.—Technic of operation: *A*, arm over chest to expose field; *B*, skin incision; *C*, incision of triceps aponeurosis to form tongue shaped flap.

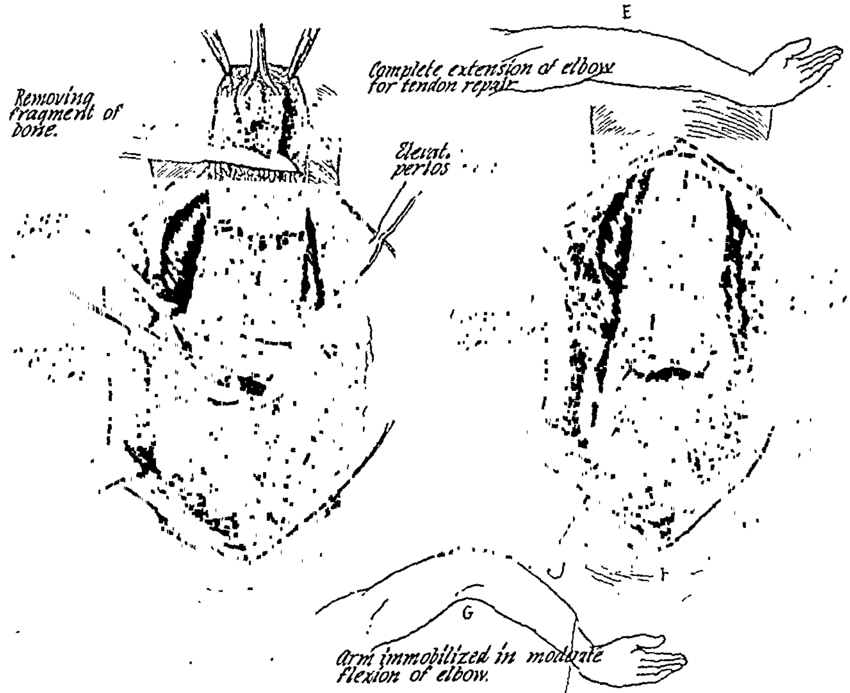
E
Removing fragment of bone.
Complete extension of elbow for tendon repair
Elevat. perios
G
Arm immobilized in moderate flexion of elbow.

Fig. 6.—Technic of operation: *D*, removal of fragment by sharp lissection; *E*, elbow extended to reattach triceps to ulna; *F*, suture of tongue of triceps aponeurosis to periosteum of ulna; *G*, skin closure and position of immobilization.

Before the skin is closed, the extended elbow is flexed to note the tension on the tongue. It is usually possible to flex the elbow to at least 110 degrees (through 70 degrees) without producing undue tension on the sutures holding the tongue to the periosteum. The skin is then closed by approximating its edges with interrupted sutures of fine silk. The suture line is covered with petrolatum gauze and dressings. The arm is copiously bandaged with sterile sheet wadding. A molded plaster splint is applied along the posterior aspect of the arm and forearm from the axilla to the wrist, with the elbow flexed to an angle which does not put undue tension on the sutures holding the tongue, usually 70 to 90 degrees.

The immobilization is continued for three weeks and then the splint is discarded and motion started. After the splint has been discarded the patient may carry the arm in a sling for a week to ten days.

In fresh fractures there may be, and usually is, a rent of varying size in the aponeurosis. Even though a rent is present, a tongue of triceps aponeurosis can be developed which permits of adequate attachment to the surrounding structures to give good anchorage of the triceps muscle to the ulna. If the suture of the triceps aponeurosis to the periosteum of the ulna is compromised because of the presence of a rent, it may be necessary to immobilize the elbow in a greater degree of extension than if a complete tongue of aponeurosis is available.

SUMMARY

Ten patients with fractures of the olecranon were treated by excision of the fractured fragment and repair of the triceps tendon. Five of these patients had old ununited fractures of the olecranon in which attempts to obtain union of the fragments by open reduction and suture with wire had failed. Two patients had an ununited fracture, which resulted from the treatment of a compound fracture by simple immobilization following débridement. One patient had an extensively comminuted fracture for which operative intervention had to be delayed two months because of infected skin. One patient had a fresh fracture, and 1 patient had a fracture which did not enter the trochlear (semilunar) notch.

All patients with old ununited fractures of the olecranon gained motion following this procedure Three patients with old ununited fractures had normal power in the triceps, and 4 patients had 75 per cent of normal power in the triceps. Of these 7 patients with old ununited fractures treated by excision of the fragment, 3 felt that their "crazy bone" was more vulnerable than before the operation. None had any instability of the elbow. All had returned to various kinds of gainful occupation. The most severe complaint consisted of an ache after prolonged heavy work.

One patient with an extensively comminuted fracture treated in this manner regained 110 degrees of motion in the elbow and normal strength in the triceps and had no complaints. An elderly patient with a fresh fracture treated by excision of the fragment and repair of the triceps tendon regained normal motion and normal triceps power and returned to her work as a maid in sixty days.

Excision of a fragment which did not involve the joint in 1 patient resulted in a normal elbow.

CONCLUSIONS

1. Old ununited fractures of the olecranon process of the ulna should be treated by excision of the fragment and repair of the triceps tendon.

2. Attempts to obtain union of old ununited fractures of the olecranon process by bone grafting requires long immobilization and results in severe loss of motion in the elbow. These fractures should not be treated by bone grafting.

3. Extensively comminuted fractures of the olecranon process of the ulna should be treated by excision of the fragments and repair of the triceps tendon.

4. In elderly people with acute fractures of the olecranon excellent results can be expected from treatment by excision of the fragment and repair of the triceps tendon.

5. Any fragment fractured from the olecranon process which does not involve the trochlear notch should be removed.

6. Instability of the elbow joint will not result as long as the coronoid process and the distal face of the trochlear (semilunar) notch of the ulna remain. As much as 80 per cent of the trochlear (semilunar) notch may be removed without danger of producing instability in the elbow joint.

7. Severe loss of triceps power does not result from excision of large fragments of the olecranon.

Medical Rehabilitation.—Now let's take a look at medical rehabilitation which is made up of five different divisions: physical therapy, occupational therapy, corrective therapy, educational therapy and manual arts therapy. They're all part of the VA program. They help patients to build up within themselves the will and the morale to get out of bed, to learn to stand, to dress, to operate a wheelchair, to walk—to want to get well. They help patients to start thinking about future job possibilities. They help patients to devote serious thought and serious effort to the kind of work they'd like to do later on, the kind of work they may be physically fitted to do. And they start doing this as soon as the patient enters the hospital. Along with this physical therapy, educational therapy goes hand in hand. Sixty-five per cent of our enlisted men in World War II and 13 per cent of our officers never graduated from high school. With the help of educational therapy we have provided the added driving force that made it possible already for 2,000 disabled veterans to win high school diplomas. . . .

I don't want you to get the idea that the purpose of medical rehabilitation is to help get a veteran through high school and send him on to college or to train him for a job. We do that in many cases. But the primary purpose of medical rehabilitation is to help a patient get well faster.—Excerpt from address by Dr. Paul R. Hawley before the twenty-sixth National Convention of Disabled American Veterans, 1947.

DELAY IN THE DIAGNOSIS OF CANCER

JOHN E. LEACH, M.D.
and
GUY F. ROBBINS, M.D.
New York

Theoretically, all cancers would be curable if the diagnosis were made quickly enough and the proper treatment were applied immediately. Because in some sites the disease may be insidious in onset and so protean in its early symptomatology, this goal will never be reached until the cause of cancer is determined or until the universal cure for cancer is found. With all the advances made in the diagnosis and treatment of cancer in the last twenty-five years, it is a fact that the reduction of cancer mortality, potentially possible, has hardly begun. The primary reason for this failure is not due to inadequate therapeutic measures. The basic cause for the lack of improvement is the prolonged delay between the time when the patient has first symptoms and the time when definitive treatment begins.

In Dorn's[1] recent survey it has been estimated that there are 300,000 new cases of cancer annually in the United States. Each year about 150,000 persons die of this disease. He has estimated further that 34 per cent of all the patients in whom a diagnosis of cancer is made die within one year. Five year survival rates in unselected cancer patients run considerably lower. On the other hand, five year survival rates in patients treated for early cancer are much higher—approximately 75 per cent in cancer of the breast and exceeding 95 per cent in cancer of the lip. The responsibility for the failure in improvement of cancer mortality rates lies both with patients and physicians. Yet reduction in the delay in diagnosis is the one point in the current offensive against cancer that holds more immediate promise than any other associated clinical or research activity at the present time.

In 1938 Pack and Gallo[2] surveyed 1,000 cases of cancer and determined where the culpability for the delay in the diagnosis of cancer lay—the physician, the patient or both, and to what extent. Since many of their data were drawn from Memorial Hospital files, it seemed a logical step to make a similar survey at the same hospital. This was done in the first three months of 1946.

The objectives of the study were to determine the present status of the delay and culpability and to determine if any progress had been made since the period 1923-1938, the time covered in the previous study.

METHOD OF STUDY

The method of study was relatively simple. All new clinic cancer patients, suspected or proved, were first seen in the examining clinic of the hospital. Here an initial complete history and physical examination were made. The data used in this study were obtained by physicians, and the patients were not aware that a special study was being made. Actually, the questions asked were no different than those asked in any complete history, consisting of: When did you first have symptoms? When did you first consult a physician?

From the Medical Department, Memorial
Physician (Dr. Leach) and National Cancer

[1] Dorn, H. F.: Illness from Cancer in the
Rep. **59**: 33 (Jan. 14); 65 (Jan. 21); 97

[2] Pack, G. T., and Gallo, J. S.:
ment of Cancer, Am. J. Cancer **33**: 44

How soon after you first consulted a physician was treatment started? Was a piece of tissue removed for examination? Of what did the treatment consist? and the like. Five hundred random case histories were used. The data were abstracted to special forms for recording and analysis.

In order to make the study as similar to the prior survey as possible, the ground rules used for determining delay and culpability were those set up by Pack and Gallo. These are:

1. The patient was considered at fault if: (*a*) he delayed three months or more after first symptoms until he consulted a physician or (*b*) he refused to follow acceptable advice such as a biopsy, roentgen studies or referral to a suitable person, hospital or clinic.

2. The physician was considered culpable if: (*a*) he failed to arrive at a diagnosis in a month or, if unable to do so, did not refer the patient to a suitable person, hospital or clinic; (*b*) he failed to give proper advice or any counsel at all, or if he failed to apply proper therapeutic measures, or (*c*) he failed to refer the patient to a suitable person, hospital or clinic when the patient failed to improve.

3. Naturally, if a combination of the above factors as present, the physician and the patient were condered jointly responsible for the delay.

Delay and Culpability

	Pack & Gallo[2] %	Present Study %
Patient alone	44.3	32.0
Patient and physician	18.0	10.8
Physician alone	17.0	27.8
No delay	20.7	29.4
	100.0	100.0

It is appreciated that data obtained from the patient alone are biased. A patient coming to a known cancer clinic is often frightened and on the defensive. He may try to justify his unhappy situation by rationalization. Too often he minimizes his negligence and magnifies his physician's errors, actual or presumed. He will forget the good advice he received and recall the unsound. Sometimes he will actually lie, possibly trying to obtain sympathy or special benefits of one type or another. However, the survey made by Pack and Gallo in 1938 contained similarly biased statements, since their data were obtained from case histories. Since this and the previous study are biased in the same direction, i. e. in favor of the patient and to the physician's disadvantage, they cannot represent the whole truth. But comparisons made on such data are quite valid.

Mention must also be made that the results in this study are not necessarily a cross section of cancer patients in this metropolitan area. The distribution of cancer by anatomic site in patients at Memorial Hospital is not the same as for the general population. Moreover, during the period in which this study was made, the Memorial Hospital was conducting a special drive for funds, with its attendant publicity. The latter must necessarily have had some effect on making the public temporarily more cancer conscious. This probably has decreased the patient responsibility and comparatively increased the physicians' responsibility for delay.

RESULTS

The data were first broken down into overall delay and culpability, as shown in the accompanying table.

It is evident that there has been a sizable decrease in delay on the part of the patients, whether considered by themselves or in conjunction with the group "patient and physician." On the other hand, the culpability of the physician alone has increased appreciably. If one considers this latter group with that of "patient and physician," i. e., cases in which the physician was responsible for delay either alone or in part, there has been a slight apparent increase from 35 to 38.6 per cent—actually of no statistical significance; at least there has been no improvement. The improvement in the "no delay" group from 20.7 to 29.4 per cent is wholly due to the decrease of the "patient alone" category from 1923-1938 to 1946. Stated in another manner, the patient is seeking help earlier but the physician does not appear to be taking advantage of the improved opportunity.

It was evident to those of us working in the examining clinic, even before this study was instituted, that many of the patients who had consulted a physician had not received an adequate examination. In order to see how much this was a factor in delay and in culpability, the cases were then broken down into four groups:

1. *Superficial.*—The superficial group consisted of those cancers that could be detected or suspected by a superficial examination. Examples of this group are cancer of the skin, lip, anterior part of the tongue and the like. One third of the group consisted of cancer of the skin.

2. *Breast.*—Cancers of the breast were placed in a separate category chiefly because of the publicity given to this form of cancer in the past.

3. *Thorough.*—The thorough group consisted of those cancers that could be detected or suspected by a careful history and complete physical examination. Examples of this are cancer of the floor of the mouth; of the posterior two thirds of the tongue; gynecologic cancer; cancer of the distal rectum and anus, and malignant lymphomas.

4. *Special.*—The special group consisted of those cancers that could be detected or suspected by a careful history and complete physical examination plus roentgenographic or endoscopic studies or both. Examples of this group are cancer of the lung, esophagus, stomach, upper rectum and colon; cancer of the kidney and bladder.

These data are portrayed in chart 1. This analysis is decidedly provocative and shows the following distinct trend: As one progresses from the superficial group, in which a lesion should be fairly obvious (if not to the patient at least to the physician) to the thorough and special groups, in which a more searching examination or special diagnostic studies are required to arrive at a diagnosis, the patient becomes decreasingly culpable while the blame assessable to the physician increases. Considered overall, the combined blame—"the physician and patient"—remains rather small in all the groups. The variations of the "no delay" category from group to group are interesting.

In almost one half of the breast cases (42.1 per cent) there was no delay. This suggests that the publicity given to cancer of the breast is affecting a large audience. The delay in patients with superficial lesions is high and not surprising to those working in the field of cancer. The seemingly innocuous, painless cancer of the skin or lip that can be observed daily seems to cause little concern until finally for a variety of reasons (cosmetic, annoyance, repeated bleeding, pain or advice of friends or relatives, or the like) the patient will seek medical aid. Oddly enough, he may then be dismayed at the diagnosis of cancer and may resent being discommoded by the therapy. In this group the physicians' culpability is low and essentially the same as in the breast group.

Undoubtedly there are cases in the special group in which the first physician suggested that special diagnostic studies be carried out or that the patient be referred to a suitable hospital or clinic although this was refused or the suggestions were not carried out. During the period of this study there was still an unfavorable wartime ratio of physicians to patients. Those patients who had to depend on hospital clinics often found them overworked and understaffed and their laboratories in a similar position. These are factors—impossible to measure—that tend to mitigate the physician's poor showing to some extent.

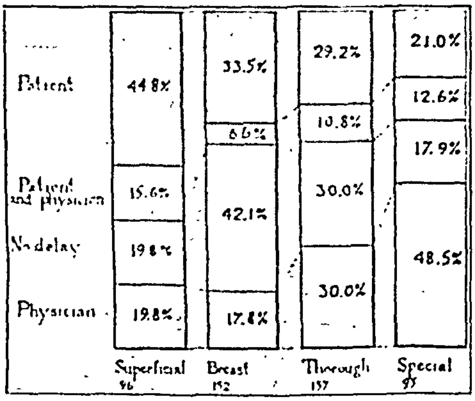

Chart 1.—Responsibility for delay in the diagnosis of cancer.

The data were then analyzed to determine the cause for delay among physicians—whether solely or partly responsible. There were 193 such instances. They are illustrated in chart 2.

Although each group is relatively small, several points may be made:

1. A good segment of the patients received improper treatment, judged by modern average standards.

2. Almost one half of the patients with cancer of the breast received improper advice. The usual purport of this was "If it doesn't bother you, don't bother it (the tumor)."

3. In almost one half of the cases in the special group there was an undue delay in making the diagnosis. Much of this was due to the assumption that the patient had a functional disorder or a benign disease. Many physicians are still unaware that early cancer in a relatively inaccessible part of the body can imitate a wide variety of functional and benign disorders. Many are still thinking in terms of the symptomatologic manifestations of late cancer.

The data were then analyzed in terms of delay in months between first symptoms and the start of treatment. This material did not permit the division into the three logical steps of first symptoms to first physician, first physician to diagnosis and diagnosis to therapy. However, the data were such that an accurate segregation into first symptoms to first physician and first physician to therapy could be made. They were analyzed by groups as described before. Five hundred cases of cancer are too few for averages to be significant because the time ranges are too great; hence, median times were used. Unfortunately, these latter measures are not comparable statistically, but at least they suggest trends. They are shown in chart 3.

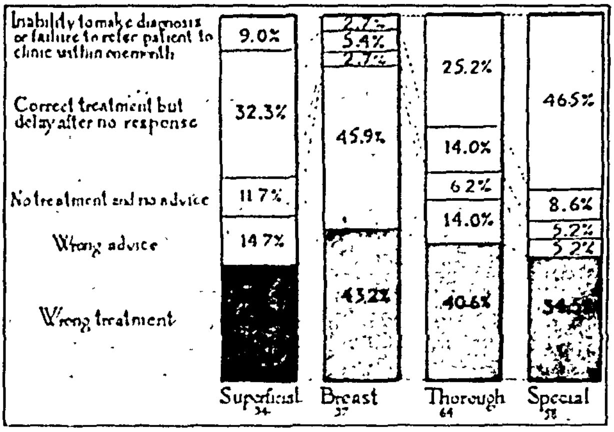

Chart 2.—Why did physicians delay?

It may be seen that as one progresses from a superficial lesion to one that is not so apparent, the delay in time on the part of the patient decreases, while that of the physician increases. This confirms the data depicted in chart 2. It should be called to mind that a median is a 50 per cent level. These data convey two ideas: the delay in time was not only quite long in the better half of the group shown, but also, in the other 50 per cent the delay was even greater.

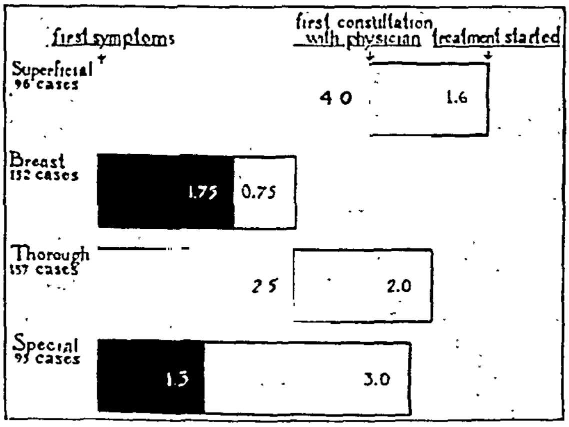

Chart 3.—The lapse of time between first symptoms and the start of definite treatment. The figures indicate the median time in months.

COMMENT

These data are not submitted to draw criticism to the medical profession's role in the f[illegible] against cancer. Errors in judgment, in diagnosi[illegible] therapy [illegible] made by everyone. As long [illegible] dical [illegible] remains a dynamic combinatio[illegible] nd scien[illegible] will continue. [illegible] y of t[illegible] tton [illegible] is a long way [illegible] the [illegible] st for tonsillectomy cases[6] have been included because the data on the interval between operation and the onset of symptoms seem pertinent in several ways. They resemble the figures based on contact with known cases, and they suggest that the natural incubation period is not shorter than the post-tonsillectomy period.

The possible wide variation in these figures—ranging from a few days to three to five weeks—raises the question as to how, in a given group of presumably related cases, the primary and secondary cases are to be identified. It could even be expected that in some instances the actual primary case will not be the first one to exhibit the clinical disease; and conversely, the first apparent case may actually be secondary to a case which does not show clinical signs until some later date. In fact, the report by Brown, Francis and Pearson[7] of the detection of virus in the stools of a boy nineteen days before he manifested paralytic poliomyelitis makes it conceivable that a family or community outbreak lasting several weeks could be due entirely to exposure of all patients at the same time.

The difficulty in evaluating the incubation period in human poliomyelitis arises in part because the clinical course is variegated and there is no uniform interpretation among clinicians as to which is the first day of disease. Figure 1 illustrates the more commonly observed clinical forms. It is estimated that 80 per cent of the patients exhibit only mild and brief symptoms: their illnesses are so slight that many are never even seen by a physician.[8] The remaining 20 per cent, the frank cases, comprise the majority of those which are diagnosed poliomyelitis. About half of these have a diphasic "dromedary" course indicated as *A* in figure 1. In this form of the disease there is a brief, preliminary first phase illness characterized by nonspecific symptoms—fever, sore throat, vomiting and headache. Then follows a period of well-being lasting from one to four days or even as long as a week or more, and later, the appearance of the second phase, in which there is again fever and for the first time clinical evidence of involvement of the central nervous system—stiff neck, stiff back, sometimes reflex changes and paralyses. The frequency with which the various symptoms occur in the two phases is shown in figure 2. The occurrence of sore throat as a prominent first phase symptom and its comparative rarity in the second phase may even have some diagnostic value in determining the stage of the disease with which one is dealing.

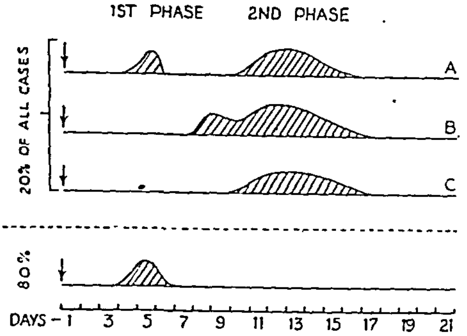

Fig. 1.—The common clinical forms of poliomyelitis (modified from Cecil's Textbook of Medicine, 1947). Shaded areas indicate periods of fever. Arrows on the left mark the hypothetic time of exposure. The abortive form is estimated as representing 80 per cent of all cases, those with central nervous system signs 20 per cent. *A* represents the "dromedary" form; and *B* and *C*, other variations described in the text.

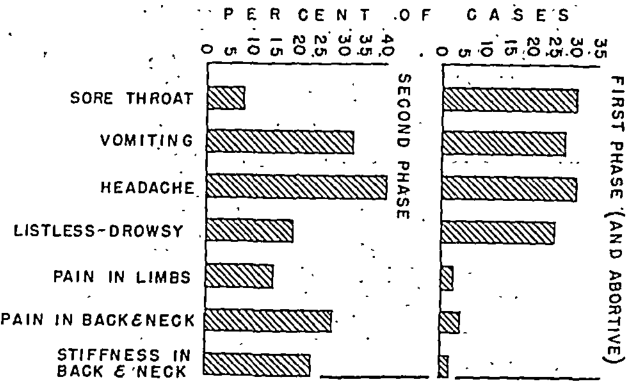

Fig. 2.—Frequency of various symptoms in poliomyelitis during the first and early second phases of the "dromedary course" and in the mild abortive form. (These figures were taken[8] from a study of 195 cases of poliomyelitis by Paul, Salinger and Trask.)

In a patient with a diphasic course such as has been described there is a possibility of at least two interpretations as far as the first day of disease is concerned. It has been our practice to consider the incubation period as the interval between exposure and the appearance of first phase symptoms, regardless of the clinical form which the disease may assume and even if the first phase symptoms are slight. This is not a general practice, for some clinicians consider the incubation period to be the time between exposure and the second phase, i. e. the onset of clinical signs of involvement of the central nervous system. That the results obtained differ by one to four or more days, depending on which of these measurements is used, has been mentioned by workers in this laboratory[9] and by Casey.[4]

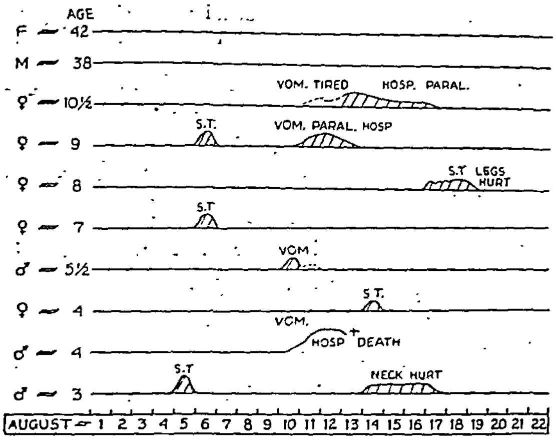

Fig. 3.—A family outbreak of poliomyelitis. Shaded areas indicate periods of fever. S. T., sore throat; Vom., vomiting; Paral., paralysis, and Hosp., hospitalized.

Other clinical forms of poliomyelitis, labeled *B* and *C* in figure 1, illustrate cases in which first and second phases of the disease are partially superimposed, or the first phase is missed or does not occur. In these instances the incubation period by clinical standards necessarily becomes the interval between exposure and the appearance of the phase of illness associated with signs of involvement of the central nervous system.

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[6] (*a*) Ayer, W. D.: Poliomyelitis, Proc. Internat. Assemb. Inter-State Post Grad. M. A. North America (1928) 1929, pp. 319-328. (*b*) Stillerman, M., and Fischer, A. E.: Acute Bulbar Poliomyelitis Following Recent Tonsillectomy and Adenoidectomy, Am. J. Dis. Child **56:** 778-786 (Oct.) 1938. (*c*) Reports on Poliomyelitis in Ontario, Department of Health, Province of Ontario, March 1938. (*d*) Eley, R. C., and Flake, C. G.: Acute Anterior Poliomyelitis Following Tonsillectomy and Adenoidectomy, with Special Reference to the Bulbar Form, J. Pediat. **13:** 63-70 (July) 1938. (*e*) Fischer, A. E.; Stillerman, M., and Marks, H. H.: Relation of Tonsillectomy and of Adenoidectomy to the Incidence of Poliomyelitis, with Special Reference to Bulbar Form, Am. J. Dis. Child. **61:** 305-321 (Feb.) 1941. (*f*) Krill, C. E., and Toomey, J. A.: Multiple Cases of Tonsillectomy and Poliomyelitis, J. A. M. A. **117:** 1013 (Sept. 20) 1941. (*g*) Aycock.[3]

[7] Brown, G. C.; Francis, T., Jr., and Pearson, H. E.: Rapid Development of Carrier State and Detection of Poliomyelitis Virus in Stool Nineteen Days Before Onset of Paralytic Disease, J. A. M. A. **129:** 121-123 (Sept. 8) 1945.

[8] Paul, J. R., and Trask, J. D.: Observations on the Epidemiology of Poliomyelitis, Tr. Coll. Physicians Philadelphia **54:** 158-162, 1932.

[9] Paul, J. R.; Salinger, R., and Trask, J. D.: "Abortive" Poliomyelitis, J. A. M. A. **98:** 2262-2268 (June 25) 1932.

Family outbreaks of poliomyelitis present opportunities for study of these various clinical patterns. A family manifesting several of the common clinical forms of the disease was studied recently by a member of the Yale Poliomyelitis Study Unit. This family consisted of a mother and father and eight children, and among these eight children presumably 8 cases of poliomyelitis occurred (fig. 3). Since no virus studies were attempted none of the abortive cases can be considered proved, but circumstances strongly suggest that the illnesses were all poliomyelitis. One child, aged 9 years, had a typical dromedary course with the first phase August 6, followed by the second phase four days later, ending with paralysis. Two other children, aged 7 years and 3 years, had first phase symptoms more or less simultaneously, but the child of 7 recovered completely with no recurrence of symptoms, whereas the child of 3 had stiff neck and fever after a long interval of ten days. Second phase symptoms probably began about the same time in 3 children, aged 10½, 9 and 4 years. Two of these had experienced no first phase symptoms. In the child aged 4 years, one of twins, there rapidly developed bulbar signs, and death ensued. In addition 2 other children, aged 8 years and 4 years (the second twin), had minor symptoms several days later than did the rest of the family.

What were the incubation periods in these various cases? Many features suggest a common time of exposure. These are the compactness of the outbreak and the fact that both of the children having "dromedary" courses had first and second phases at about the same time while in the 2 paralytic cases without prodromal phases the patients exhibited their paralytic signs at the same time as did the 2 with dromedary courses. It is possible, nevertheless, although much less likely, that several of the cases could be secondary ones. The history of this family, with its variety of types of onset, illustrates the difficulties which are inherent in the problem of estimating the incubation period on the basis of clinical data.

The complexities are further brought out by the observations of Brown, Francis and Pearson [7] mentioned previously. These authors isolated virus from the stools of a boy nineteen days before paralytic poliomyelitis developed! This observation also raises other questions, namely, what does the incubation period mean in terms of the pathogenesis of poliomyelitis, and what pathogenic processes are reflected in the various clinical forms outlined above (fig. 1 *A*, *B* and *C*)? Draper [10] interpreted the latter problem more than twenty years ago by designating the first phase of the dromedary form, as the period of "systemic reaction to generalized infection; the second a highly specialized reaction of the meninges, brain and cord . . ." According to this interpretation the incubation period would be the time between exposure and the beginning of the systemic reaction, a view which is only partially in keeping with our own present interpretation. Thus the incubation period might be regarded as the interval between the introduction of virus into the body and the appearance of clinical symptoms resulting from its implantation in a number of tissues of the host. These tissues include not only the pharynx and the intestinal tract but the central nervous system and perhaps other anatomic sites. They have been illustrated schematically in figure 4, in which the diagram indicates possible courses of events. Whether the virus enters by way of the mouth (or nose) and goes thence to the pharynx, it probably appears within the upper and/or lower portion of the gastrointestinal tract within seventy-two hours.[11]

Furthermore, it seems that implantation in the wall of the pharynx and intestinal tract occurs soon after the introduction of virus into the body. In these sites it probably multiplies—or it may multiply elsewhere—and is excreted with the feces. But whether or not these activities are always accompanied by concurrent invasion of the central nervous system is not known.

The way in which paralytic poliomyelitis follows within a few days to several weeks after tonsillectomy in a person who presumably already harbors the agent in his throat makes it seem possible that virus can remain localized in the throat and spread to the central nervous system when the host-virus equilibrium is upset by local peripheral trauma. In the case of tonsillectomy the time interval between the exposure of cut nerve endings at operation and signs of disease of the central nervous system is compatible with spread of virus via the nerves to the medulla. Nevertheless another explanation is possible, in that local peripheral trauma may be reflected in the corresponding areas of the cord in the form of central changes which favor activation of virus already present in the central nervous system.

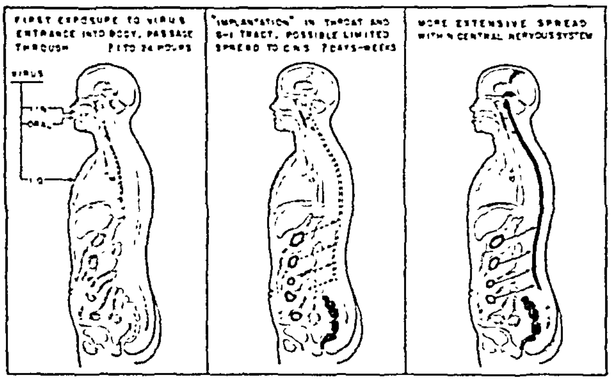
FIRST EXPOSURE TO VIRUS
ENTRANCE INTO BODY, PASSAGE
THROUGH 1 TO 24 HOURS
VIRUS
I.N.
ORAL
I.C.
"IMPLANTATION" IN THROAT AND
G-I TRACT, POSSIBLE LIMITED
SPREAD TO C.N.S. DAYS-WEEKS
MORE EXTENSIVE SPREAD
WITHIN CENTRAL NERVOUS SYSTEM

Fig. 4.—The pathogenesis of human poliomyelitis—a possible course of events when virus is introduced into the body for the first time. Blackened areas indicate the localization of virus in anatomic sites (based on clinical and autopsy studies). Dotted areas indicate sites where the virus *may* be located. The middle panel represents the situation in a mild abortive attack and in the first phase symptoms of a dromedary case. The panel on the right represents the frank case. Presumably the processes represented in these diagrams may be arrested at any one of the three stages depicted. I.N., intranasal; I.C., intracutaneous. Dr. R. Ward assisted in the preparation of this diagram.

Studies in the experimental disease provide evidence on this question. Bodian and Howe [12] have demonstrated the presence of lesions in the central nervous system of orally infected chimpanzees who had inapparent or abortive poliomyelitis. If one can draw analogies from the experimental disease, this finding may indicate that early invasion of the central nervous system is common, so that by the time virus is present in the stools it may be presumed to be present in the central nervous system as well.[12] If such is the case, it is conceivable that the first phase of the dromedary type of the human disease or the abortive illness is frequently associated with some invasion of the central nervous system. The observation made by Andelman, Fishbein, Casey and Bundesen [13] on the elevation of the protein level of the cerebrospinal fluid several weeks after the acute infection in abortive poliomyelitis strengthens this supposition, but it remains to be proved. The history of rapid—almost immediate—onset of paralytic poliomyelitis in man following severe exercise is a phenomenon which also suggests that in persons so affected the virus is already present in the central nervous system; exercise is the factor which produces physiologic changes capable of upsetting the host-virus equilibrium, thus allowing virus to spread widely within the central nervous system and cause damage sufficient to produce clinical signs of disease.

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[10] Draper, G.: Acute Poliomyelitis, in Nelson's Loose-Leaf Living Medicine, New York, Thos. Nelson & Sons, 1926, chap. 31, pp. 67-84.

[11] (*a*) Evidence for this is based on the fact that poliomyelitis virus fed to chimpanzees has been recovered readily from their stools one to two days later (Melnick, J. L., and Horstmann, D. M.: Active Immunity to Poliomyelitis in Chimpanzees Following Subclinical Infection, J. Exper. Med. **85**: 287-303 [March] 1947). (*b*) Virus has been introduced into the skin of monkeys and chimpanzees and found in their stools as soon as three days after inoculation—several days before clinical signs of disease appeared (Melnick, J. L.: The Recovery of Poliomyelitis Virus from the Stools of Experimentally Infected Monkeys and Chimpanzees, J. Immunol. **53**: 277-290 [July] 1946).

[12] Bodian, D., and Howe, H. A.: Non-Paralytic Poliomyelitis in the Chimpanzee, J. Exper. Med. **81**: 255-27) 1945.

In experimental poliomyelitis variation in the incubation period is common, depending to some extent on the animal species, the dose, the route of inoculation and the strain of virus used. Rhesus monkeys, when inoculated intracerebrally with recently isolated human strains, usually manifest fever and paralysis between six and fourteen days after inoculation. If the monkey-adapted MV strain is employed the incubation period is shorter—three to six days. The same difference between the two types of strains was noted by Howe and Bodian [14] when rhesus monkeys were inoculated by way of the peripheral nerves, the fresh strains producing paralysis in eight to thirteen days and the MV strain in four to five days. Howe and Bodian, by the administration of virus-containing human stools orally and by stomach tube produced paralytic poliomyelitis in 2 chimpanzees after incubation periods of twelve and twenty-eight days, respectively.[14] An infant rhesus monkey has been infected by the oral route nineteen days after its first and six days after its last exposure to virus.[15] The extremes reported have ranged from two days when virus-containing human stool suspensions were introduced directly into the lumbar cord of rhesus monkeys [16] to seventy-one days in a monkey inoculated intracerebrally.[16]

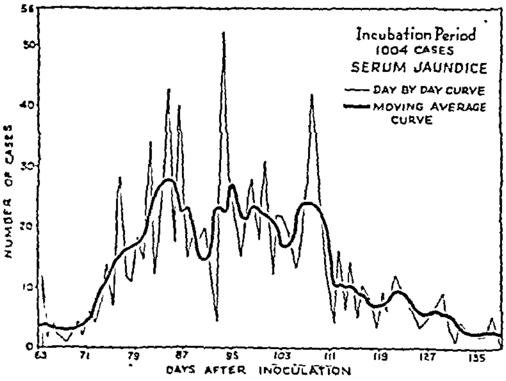

Fig. 5.—The variation in incubation period of homologous serum hepatitis in 1,004 persons inoculated with the same dose of the same lot of the same material on the same day (from Parr [19]).

In another host, namely mice, irregularities are still greater. Using the Lansing rodent-adapted strain and inoculating the animals intracerebrally, the incubation period is usually between two and ten days, but occasionally it has been noted to be as short as twenty-four hours and as long as ninety-three days.[17] With the rodent adapted Y-SK strain it varies between two and eighty-two days in our laboratory. Although the majority of animals become paralyzed three to six days after inoculation, a significant number become paralyzed as late as forty to fifty days. At times there is a grouping of illnesses about certain days, resulting in a diphasic curve which resembles that seen in epidemic diseases showing primary and secondary waves of cases. Similar observations have been made with the Lansing strain in mice.[18]

These results with the experimental disease indicate wide variations in the response of individual hosts to an infectious agent introduced under the same conditions, and there is reason to believe that in the human host similar variations occur. This variability of response is not often subject to measurement in the human host in any disease, but the occurrence of homologous serum hepatitis in members of the armed forces provided such an opportunity. Parr [19] has described an outbreak which occurred at Camp Polk in 1942. On February 27, over 5,000 soldiers were inoculated with a yellow fever vaccine containing human serum. As the result of an icterogenic agent in the vaccine 1,004 cases of homologous serum hepatitis developed among the soldiers, all of whom had been injected on the same day with the same dose of the same lot of material. Figure 5, taken from Parr, illustrates the incubation period in these cases. It ranged from sixty-three to one hundred and thirty-seven days, and the curve is not unlike those which may be drawn by plotting the onset of cases in a number of epidemics of differing types. Although homologous serum hepatitis is a disease which differs from poliomyelitis in that it characteristically has an extremely long incubation period, these figures nevertheless bring out a factor common to all infectious disease, namely, the role of variation in the response of a host to an infectious agent. There is evidence to suggest that this might be an important factor in human poliomyelitis.

COMMENT AND SUMMARY

While analogies may be drawn between the observed incubation period in experimental poliomyelitis and that estimated for the human disease, exact information concerning the latter cannot be obtained in this fashion. It should be emphasized, however, that poliomyelitis virus is capable of great variability in behavior in various hosts under different conditions; in the human disease the interval between apparent exposure and the onset of clinical symptoms and signs has been observed to be as short as three and as long as thirty-five days, with many cases developing after a four to ten day period. But unsolved problems as to what constitutes exposure, what role latency may play and what the pattern of pathogenesis is, represent some of the factors to be elucidated before exact knowledge of the incubation period in human poliomyelitis can emerge.

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[13] Andelman, M. B.; Fishbein, W. I.; Casey, A. E., and Bundesen, H. H.: Spinal Fluid Protein in the Retrospective Diagnosis of Subclinical Poliomyelitis, South M. J. 39: 706-718 (Sept.) 1946.

[14] Howe, H. A., and Bodian, D.: Neural Mechanisms in Poliomyelitis, New York, The Commonwealth Fund, 1942.

[15] Horstmann, D. M.; Melnick, J. L.; Ward, R., and SaFleitas, M. J.: Susceptibility of Infant Rhesus Monkeys to Poliomyelitis Virus Administered by Mouth, J. Exper. Med., to be published.

[16] Melnick, J. L.; Horstmann, D. M., and Ward, R.: Intraspinal Inoculation of Infective Human Stools as a Method of Producing Poliomyelitis in the Monkey, J. Infect. Dis. 77: 13-24 (July-Aug.) 1945.

[17] Armstrong, C.: Choriomeningitis and Poliomyelitis, in Harvey Lectures, 1940-1941, Baltimore, Williams & Wilkins Company, 1941, vol. 36, pp. 39-65.

[18] Young, L. E., and Merrell, M.: Mouse-Adapted Lansing Strain of Poliomyelitis Virus: II. A Quantitative Study of Certain Factors Affecting the Reliability of the Neutralization Test, Am. J. Hyg. 37: 80-92 (Jan.) 1943.

[19] Parr, L. W.: Host Variation in the Manifestation of Disease, with Particular Reference to Homologous Serum Jaundice in the Army of the United States, M. Ann. District of Columbia 14: 443-449 (Oct.) 1945.

THE EMERGENCY TREATMENT OF VASCULAR OCCLUSIONS

EDGAR V. ALLEN, M.D.
Rochester, Minn.

This discussion will be limited to consideration of sudden peripheral arterial occlusion (embolism and thrombosis), to acute venous thrombosis and to embolism of the pulmonary arteries. The substance of this paper is the result of the observations of my associates Drs. N. W. Barker, E. A. Hines Jr. and Walter F. Kvale, as well as of my own observations. I may remark, parenthetically, that the use of anticoagulant agents in acute myocardial infarction is now well established, although final evaluation of their use must await further experience, such as that being acquired by workers under the supervision of the American Heart Association. It is safe to conclude now that the anticoagulant agents heparin and dicumarol may be used with safety in acute myocardial infarction. The five clinical reports available indicate, in the aggregate, that the use of anticoagulant agents lessens the percentage of deaths from acute myocardial infarction and sharply diminishes the incidence of arterial embolism, venous thrombosis and additional myocardial infarction after acute myocardial infarction.[1] It is a method of treatment which has gained increasing favor in the past two years.

There has been little new in the treatment of acute arterial occlusion (thrombosis and embolism) of the cerebral circulation. This is a field for study in the future. Perhaps intensive consideration of this problem will be as productive, at least in part, as has that of the acute vascular occlusions to be considered in this presentation.

THE USE OF HEPARIN AND DICUMAROL

Because administration of the anticoagulant agents heparin and dicumarol is an integral and important part of the treatment of the acute venous and arterial occlusion to be considered subsequently, it is well, first, to have a clear understanding of the use of them. Both are used for the purpose of halting intravascular thrombosis. The use of heparin is advantageous in that it has a quick effect on coagulability of the blood, in that its effect quickly ceases when administration is discontinued and in that the drug can be administered without laboratory control. It has the disadvantages of being expensive (about $9 a day) and of requiring parenteral administration. It can be administered effectively by repeated single intravenous injections of 50 mg. every four hours. A combination of heparin with gelatin, dextrose and glacial acetic acid (Pitkin menstruum) may be injected subcutaneously; the heparin is then absorbed slowly, so that injection carried out every two or three days may have sufficient anticoagulant effect.[2] Heparin should be used whenever a quick effect is desired and whenever the absence of wholly reliable laboratory facilities for determination of values for prothrombin in the blood make the use of dicumarol inadvisable.

The administration of dicumarol is advantageous in that the drug is effective when administered orally and in that it is cheap (a few cents a day). It is disadvantageous in that its effect on prothrombin in the blood is delayed (twenty-four hours or longer), that its effect continues after discontinuation of administration (two days or longer) and that entirely reliable laboratory facilities are necessary for safe and efficient administration.

The danger of hemorrhage attends the use of both heparin and dicumarol, but this danger is minimal when they are used judiciously and expertly. If bleeding occurs during the use of dicumarol or if excessive deficiency of prothrombin results, the intravenous injection of vitamin K will restore the prothrombin in the blood to normal or nearly normal values. The transfusion of fresh blood is advisable if bleeding is excessive. My associates Drs. T. W. Parkin and W. F. Kvale have demonstrated the effectiveness of protamine in neutralization of the effect of heparin. Fifty mg. of protamine injected intravenously will neutralize the effect on the blood of 50 mg. of heparin. The methods of use of heparin and dicumarol are presented in table 1. The danger of hemorrhage, the conditions in which anticoagulant agents are to be used cautiously or avoided and the method of calculation of the percentage of prothrombin from prothrombin "time" have been discussed in detail in other presentations.[3]

Table 1.—*Methods of Use of Anticoagulant Agents in Acute Vascular Occlusion*

I. Emergency or use in absence of laboratory facilities for determination of prothrombin in the blood
    a. 50 mg. of undiluted heparin, injected intravenously every four hours
II. Absence of emergency: adequate laboratory facilities available
    a. 300 mg. of dicumarol on first day
    b. 200 mg.* on each subsequent day that value for prothrombin in the blood is greater than 20 per cent
III. Emergency and continued use of anticoagulant agents
    a. 50 mg. of heparin every four hours and dicumarol as indicated in II, above
    b. Heparin discontinued when the value for prothrombin is 30 per cent or less
    c. Blood for determination of prothrombin should be obtained not less than three hours after last injection of heparin, since presence of heparin in the blood gives a value for prothrombin which is falsely small

* In instances in which the drug produces excessive effects on the concentration of prothrombin in the blood, 100 mg. may be used instead of 200 mg. Infrequently, more than 200 mg. may be needed. The aim of treatment is to maintain the values for prothrombin between 10 and 30 per cent.

VENOUS THROMBOSIS

The chief danger of venous thrombosis in the extremities is pulmonary embolism. Venous thrombosis, however, may produce venous obstruction and,

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From the Division of Medicine, Mayo Clinic.

Read in the General Scientific Meetings at the Ninety-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., June 9, 1947.

[1] Nichol, E. S., and Page, S. W., Jr.: Dicumarol Therapy in Acute Coronary Thrombosis: Results in 50 Attacks, with Review of Data on Embolic Complications and Immediate Mortality in Myocardial Infarction, J. Florida M. A. **32**: 365-370 (Jan.) 1946. Peters, H. R.; Guyther, J. R., and Brambel, C. E.: Dicumarol in Acute Coronary Thrombosis, J. A. M. A. **130**: 398-403 (Feb. 16) 1946. Wright, I. S.: Experiences with Dicumarol (3,3' Methylene-Bis [4-Hydroxycoumarin]) in the Treatment of Coronary Thrombosis with Myocardial Infarction: Preliminary Report, Am. Heart J. **32**: 20-31 (July) 1946. Parker, R. L., and Barker, N. W.: The Use of Anticoagulants in the Management of Acute Myocardial Infarction: Preliminary Report, Proc. Staff Meet., Mayo Clin. **22**: 185-192 (May 14) 1947. Glueck, Helen I.; Strauss, Victor, and McGuire, Johnson: Combined Heparin-Dicumarol Therapy of Myocardial Infarction, read before the Annual Scientific Section of the American Heart Association, Atlantic City, N. J., June 6-7, 1947.

[2] Loewe, Leo, and Hirsch, Edward: Heparin in the Treatment of Thromboembolic Disease, J. A. M. A. **133**: 1263-1268 (April 26) 1947.

[3] Allen, E. V.: The Clinical Use of Anticoagulants: Report of Treatment with Dicumarol in 1,686 Postoperative Cases, J. A. M. A. **134**: 323-329 (May 24) 1947. Allen, Hines, Kvale and Barker.[4]

at a remote time, the manifestations of chronic venous insufficiency of the lower extremities, easily recognized as edema, varices, stasis dermatitis and cellulitis, and stasis ulceration of the skin. When the physician sees a patient who has venous thrombosis in the legs, his chief concern is prevention of fatal pulmonary embolism. Anticoagulant agents are effective in this regard in most instances (table 2). The secondary concern is halting the process of venous thrombosis. Anticoagulant agents likewise are effective in this regard (table 2). The anticoagulants may be used in the postpartum state without unusual danger from uterine bleeding.[4]

In addition to the use of anticoagulants, I recommend elevation of the involved extremity and the application of a moist warm pack.

It may be advisable to use the program outlined in the third section of table 1 in all cases of venous thrombosis. Actually, clinical experience has indicated that dicumarol alone is effective in most cases. If the venous thrombosis is extensive or if it is progressing, both heparin and dicumarol should be used. Dicumarol should be used until there has been no evidence of new venous thrombosis for seven to ten days. The patient may be active when dicumarol has produced satisfactory reduction of prothrombin in the blood. If there is edema at this time, an adequate support must be worn until it can be discarded without permitting edema.

Table 2.—*Results of Anticoagulant Therapy in 352 Cases of Postoperative Venous Thrombosis*

Condition to Be Prevented	Cases: Expected if Anticoagulants Had Not Been Used	Cases: Actual Number
Subsequent venous thrombosis or pulmonary embolism	88	9*
Subsequent fatal pulmonary embolism	20	0

*One case of minor pulmonary infarction and 7 cases of venous thrombosis; in 3 cases the percentage of prothrombin in the blood was more than 30. In 1 case treatment with dicumarol had been discontinued and prothrombin was normal.

It is my belief that the use of anticoagulant agents is, in general, superior to ligation of veins as a therapeutic procedure in acute venous thrombosis, although in many instances[5] there is no doubt of the effectiveness of ligation of veins. It appears to me that, with three exceptions, the record for the use of anticoagulant agents is better than that of ligation of veins. Ligation of veins is superior in the prevention of pulmonary embolism arising from thrombi in the veins of the legs which recur repeatedly at long intervals, because it is difficult to use anticoagulant agents for long periods. Ligation of veins is the treatment of choice when anticoagulants are contraindicated and when they are ineffective, as is very rarely the case.

We have had some experience with injection of a local anesthetic agent into the paravertebral sympathetic ganglions when acute venous thrombosis occurs. This procedure does not prevent pulmonary embolism or halt venous thrombosis. I know of no acceptable evidence that it lessens the remote effects of venous thrombosis; that is, chronic venous insufficiency, which produces varices, dermatitis and ulceration. It lacks effectiveness, therefore, in prevention of the three major complications of venous thrombosis. I do not deny that this method may lessen the pain of venous thrombosis, but such pain usually is minimal and unimportant, responding satisfactorily to the oral administration of anodynes. Anesthetization may lessen fever, but fever is transient, is minimal to moderate and is not important. The procedure may hasten the disappearance of edema, but this ordinarily is accomplished by simple elevation of the limb. Anesthetization of appropriate paravertebral ganglions may lessen the arterial spasm occasionally associated with venous thrombosis, but the local application of a warm pack may be as effective. Hence, the injection of anesthetic agents certainly has limited usefulness, and my experience, as well as that of some of my experienced surgical colleagues, has led to sharp restriction of the use of anesthetization of paravertebral ganglions in the treatment of acute venous thrombosis.

Table 3.—*Treatment of Acute Peripheral Arterial Occlusion (Embolism and Thrombosis)*

I. Early diagnosis and treatment
II. Relieve pain
    a. Opiates as needed
III. Avoid measures which do harm, such as
    a. Application of heat
    b. Elevation of the extremity
IV. Administer anticoagulant agents
    a. Heparin and dicumarol
V. Relieve arterial spasm
    a. Heat
        1. Warm environment; room temperature about 90 F.
        2. Apply warm packs to other than involved extremities
    b. Alcohol by mouth (liberally !); Papaverine (see table 4)
    c. Anesthetization of appropriate sympathetic nerves
        1. Spinal or caudal anesthesia
        2. Paravertebral anesthetization of sympathetic nerves
    d. Oscillating bed if available
VI. Embolectomy, provided medical treatment is not effective in greatly improving the circulation within 6-12 hours and provided hopelessness of saving the limb is not already apparent

Table 4.—*Treatment of Pulmonary Embolism*

I. Emergency treatment
    a. 1/60 grain atropine sulfate and ½ grain of papaverine hydrochloride intravenously
    b. Oxygen by inhalation
    c. 50 mg. of heparin intravenously and 300 mg. of dicumarol orally
    d. Avoid use of morphine, epinephrine and digitalis
II. Continued treatment
    a. Repeat injections of atropine and papaverine every 4 to 6 hours as needed
    b. Oxygen as needed
    c. Heparin and dicumarol
III. Absence of emergency
    a. Heparin and dicumarol

SUDDEN ARTERIAL OCCLUSION IN THE EXTREMITIES

It is well to bear in mind the fact that arterial embolism ordinarily produces much more profound effect on the arterial circulation than does simple interruption in the continuity of a major artery.[6] The ischemia which results is caused in a large part by the spasm of collateral arteries induced by the presence of an embolus. If such ischemia persists for more than a few hours, the intima of blood vessels distally is injured to such a degree that intravascular thrombosis occurs when blood again runs into them. The ischemia which originally was caused by mechanical obstruction of an artery by an embolus and by arterial spasm eventually is the result of arterial thrombosis if treatment is delayed or inadequate. These events appear less striking in acute arterial thrombosis but are nonetheless important. The treatment of acute peripheral arterial embolism is outlined in table 3. Better understanding of the abnormal physiology involved in arterial embolism and the use of methods to correct it have resulted in far better results than were obtained a few years ago At the Mayo Clinic we have treated 19 patients who had acute arterial embolism with most of the methods outlined in table 3, excepting spinal and caudal anesthesia and embolectomy. Some of the cases concerned have been reported previously.[7] Treatment was begun early in 11 instances; there was recovery of the circulation to the limb in 10 instances. In 8 instances treatment was begun more than twenty-four hours after embolism had been sustained. Recovery of circulation occurred in only 2 cases. In 16 instances treatment was initiated within twenty-four hours of the onset of acute arterial thrombosis; recovery occurred in 13 instances. In 10 instances treatment was begun twenty-four hours or more after the onset of acute arterial thrombosis; recovery of the limb concerned occurred in 5 instances.

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[4] Allen, E. V.; Hines, E. A., Jr.; Kvale, W. F., and Barker, N. W.: The Use of Dicumarol as an Anticoagulant: Experience in 2,307 Cases, Ann. Int. Med., to be published.

[5] Allen, A. W.; Linton, R. R., and Donaldson, G. A.: Venous Thrombosis and Pulmonary Embolism, J. A. M. A. **133:** 1268-1274 (April 26) 1947.

Table 5.—*Results: 329 Cases of Pulmonary Embolism in Which Anticoagulant Therapy Was Used*

Condition to Be Prevented	Cases	
	Expected If Anticoagulants Had Not Been Used	Actual Number
Subsequent venous thrombosis or pulmonary embolism	144	3
Subsequent fatal pulmonary embolism	60	1*

* Occurred after prothrombin time had returned to normal.

These figures emphasize adequately that the early institution of measures to diminish the coagulability of the blood and to relieve arterial spasm, along with avoidance of harmful measures, has greatly brightened the outlook for recovery of limbs affected with acute arterial occlusion. The figures emphasize also the predominant role of medical treatment and the greatly reduced need for surgical treatment of acute arterial embolism.

PULMONARY EMBOLISM

Knowledge of the mechanisms which are initiated by pulmonary embolism has progressed rapidly in recent years. Death from pulmonary embolism is not solely the result of mechanical plugging of a pulmonary artery. When an embolus lodges in a pulmonary artery, arterial spasm, bronchospasm, atelectasis, deposition of a thrombus on the embolus and coronary insufficiency occur. These are the agents of death in pulmonary embolism. We are much indebted to de Takats and Katz and their respective associates for these observations.[8]

The treatment of pulmonary embolism is outlined in table 4. Every hospital should be prepared for the emergency treatment of pulmonary embolism. Although no final conclusion has been reached concerning the effectiveness of emergency treatment, it is probable that it can save many lives.

When a patient has recovered from pulmonary embolism, the major problem is the prevention of a second episode, which in many instances will be fatal. Experience has indicated clearly that pulmonary embolism from which a patient has recovered frequently is only the pilot event of a more catastrophic—indeed, a lethal —process of embolism.

The experience at the Mayo Clinic indicates clearly the effectiveness of the anticoagulant agents in the prevention of additional pulmonary embolism, once pulmonary embolism has occurred.[9] The most recent evaluation of the use of such agents postoperatively is presented in table 5. The remarks made previously concerning the comparative usefulness of ligation of veins are pertinent in this consideration.

SUMMARY

In recent years the management of patients who have acute vascular occlusion has become eminently more satisfactory. Understanding of the mechanisms involved, achieved by experimental and clinical observation and early and adequate treatment, has greatly improved the outlook for patients who have acute intravascular thrombosis. Many lives and limbs can be saved and many patients can be spared the distressing experience of pulmonary embolism and chronic venous insufficiency, which is the remote result of extensive venous thrombosis, if treatment based on wisdom and understanding is instituted early.

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[6] McKechnie, R. E., and Allen, E. V.: Effect on the Circulation of Mechanical Occlusion of Individual Arteries of the Extremities: Relation to Arterial Embolism, Am. Heart J. **14:** 127-134 (Aug.) 1937.

[7] Barker, N. W.; Hines, E. A., Jr., and Kvale, W. F.: Treatment of Acute Arterial Occlusion of Extremities, with Special Reference to Anticoagulant Therapy, Minnesota Med. **29:** 250-252 (March) 1946.

[8] Jesser, J. H., and de Takats, G.: Visualization of Pulmonary Artery During Its Embolic Obstruction, Arch. Surg. **42:** 1034-1041 (June) 1941; The Bronchial Factor in Pulmonary Embolism, Surgery **12:** 541-552 (Oct.) 1942. de Takats, G., and Fowler, E. F.: Problem of Thromboembolism, ibid. **17:** 153-177 (Feb.) 1945. de Takats, G.; Fenn, G. K., and Jenkinson, E. L.: Reflex Pulmonary Atelectasis, J. A. M. A. **120:** 686-690 (Oct. 31) 1942. de Takats, G., and Jesser, J. H.: Pulmonary Embolism: Suggestions for Its Diagnosis, Prevention and Management, ibid. **114:** 1415-1421 (April 13) 1940. Malinow, M. R.; Katz, L. N., and Kondo, B.: Is There a Vagal Pulmonocoronary Reflex in Pulmonary Embolism? Am. Heart J. **31:** 702-710 (June) 1946. Megibow, R. S.; Katz, L. N., and Feinstein, M.: Kinetics of Respiration in Experimental Pulmonary Embolism, Arch. Int. Med. **71:** 536-546 (April) 1943.

[9] Barker, N. W.: Anticoagulant Therapy in Postoperative Thrombophlebitis and Pulmonary Embolism, Minnesota Med. **29:** 778-782 (Aug.) 1946. Allen.[3] Allen, Hines, Kvale and Barker.[4]

Virchow and a New Epoch.—In 1858 a young man of 37 gave a series of lectures in Berlin to a group of medical men. These lectures, later published under the title Die Cellularpathologie, ushered in a new epoch. The young man was Rudolf Virchow. He has been acclaimed, perhaps a little extravagantly, as the greatest figure in medicine since Hippocrates. By applying the cell theory of Schleiden and Schwann to pathology he transferred medicine from its ancient foundation on the four humors of the Greeks to a new foundation, the fundamental unit of modern biology, the cell, and transformed pathology itself into a modern science. At the same time, in the same book, he established the dictum *omnis cellula e cellula,* which has proved to be one of the most important axioms of biology. In these lectures we find epitomized the interaction between medicine and biology, which has repeatedly contributed to the advancement of both.—Wilson, J. Walter: Virchow's Contribution to the Cell Theory, *Journal of the History of Medicine and Allied Sciences*, Spring 1947.

SUPPORT OF THE PARALYZED FACE BY FASCIA

JAMES BARRETT BROWN, M.D.
and
FRANK McDOWELL, M.D.
St. Louis

In paralysis of the facial nerve, the temporal muscle and its fascia can be used for supporting the drooped tissues of the face. For this the muscle is connected to the face by loops of fascia lata, and it can then straighten the deviated mouth and columella nasi and support them in the normal position. The nasolabial fold is often reformed, and a small amount of movement may be produced by the muscle which is controlled by the fifth cranial nerve. Patients are grateful also for the improved control of the mouth, which permits them to smoke, whistle and eat and drink in public.

The procedure does not disturb the patient much, does not impair the functions of other nerves or leave visible facial scars. Five or six days' hospitalization is recommended, with an additional week of outpatient care. Worth while improvement is usually noted at once.

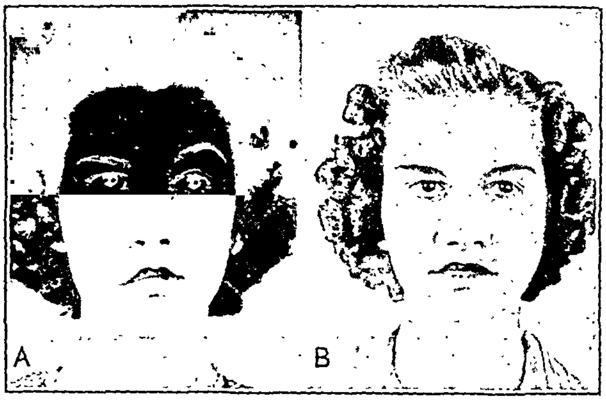

Fig. 1.—*A*, total paralysis resulting from removal of malignant parotid tumor (elsewhere). All of the branches were individually severed in the parotid area. *B*, after one operation the patient appears quite normal in repose and with small smile. She attends a university and does well.

INDICATIONS FOR OPERATIVE REPAIR

The operative intervention is indicated when the paralysis of the facial nerve seems to be permanent and when direct suturing, nerve grafts or anastomoses are not feasible—or when these have been tried and have not produced the desired result. It may also be used primarily in conjunction with any of the nerve operations.

THE OPERATIVE PROCEDURE

Endotracheal anesthesia of the patient is employed with the tube coming out the opposite corner of the mouth. Strips of fascia lata 4 to 8 mm. wide are obtained in the longest lengths possible from the iliotibial band, by use of the Masson or other stripper. The temporal incision is made in the hair-bearing area and is carried down to the temporalis fascia. A small stab opening is made in the middle of the upper lip and another one in the lower lip 1 to 2 cm. outside the angle of the mouth and 1 cm. below the vermilion. The first strip is then passed subcutaneously from the temporal wound down through the face, out of the stab opening in the upper lip and back up to the temple by a different route, so that it forms a loop and encircles a good deal of soft tissue in the lip. Another strip is passed similarly down to the stab opening in the lower lip and back, care being taken again to avoid puncturing the buccal mucosa. The fascia may be carried through the face by a Blair fascia needle or by an ordinary long sack-sewing needle.

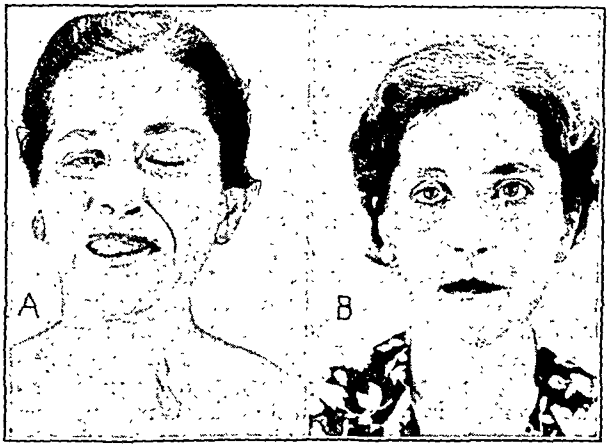

Fig. 2.—*A*, paralysis which resulted from the removal of an intracranial tumor and was repaired by anastomosis of the eleventh nerve (elsewhere). In this instance the patient recovered only mass movements, the muscles working on an "all or none" basis and not very helpful in expression. *B*, after fascial transplant the patient has learned not to use the anastomosis and has even requested that it be disconnected.

After being placed, the loops are worked back and forth a little to take out any slack and the temporalis fascia is opened about 1 inch (2.5 cm.) above the coronoid to expose the muscle fibers. A heavy full curved fascia needle is used, and one end of each strip is passed around a substantial segment of muscle and tied to the other end by a surgeon's knot. The knots are pulled taut with the mouth in considerable overcorrection and then fixed by taking several interrupted silk stitches through the knots and by sewing the ends of the strips down. A pressure dressing is applied to cover the eye, ear and entire side of the face; this helps materially in getting smooth early healing.

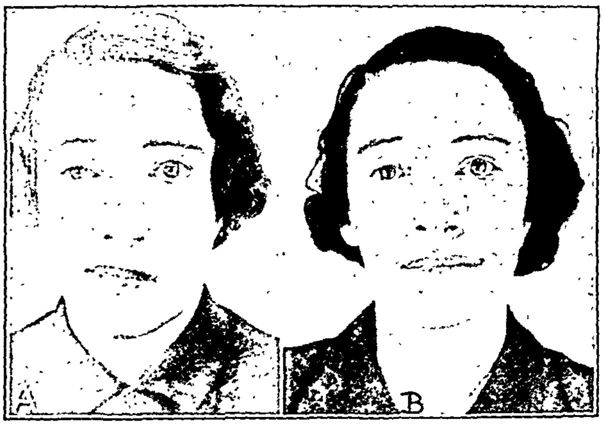

Fig. 3.—Result (*A*) following free nerve graft (elsewhere) for paralysis; *B*, after fascial transplant. Figures 2 and 3 are shown not as an argument against the nerve operations but to note that something further can be done when they do not work as well as expected.

From the Department of Surgery, Washington University School of Medicine.

POSTOPERATIVE CARE

The pressure dressing is left on four or five days (if the eye is comfortable) and then replaced by a smaller one. Chewing is limited for the first week but is gradually resumed as any tenderness in the temple subsides. The overcorrection disappears within about ten days, and after two or three weeks the patient may practice biting down in front of a mirror until he can produce some lateral movement of the mouth. He notes how this is done and then strives to increase the extent of the movement. A little later he may try to balance the movement with a small smile on the normal side; meanwhile he should practice repressing the movements on the normal side. This latter point is emphasized, as almost any patient with a facial paralysis will try so hard to move the paralyzed side that he will form the habit of exaggerating the movements of the normal side. He must learn that balance in the face is more important than the actual range of motion and must always strive for this balance. As a starting point, he may consciously try to remain a little glum and then work from this point forward as he learns better control of his expressions. Sudden large laughs can never be adequately balanced in these patients and may reveal a paralysis which is otherwise fairly well controlled.

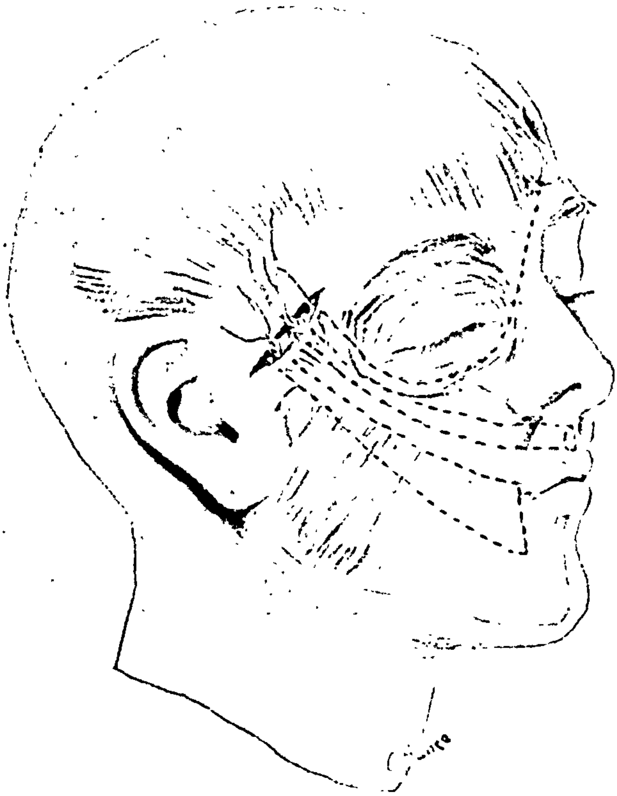

Fig. 4.—Diagram showing the location of the two main fascial loops in the face. An additional strip is sometimes placed in the lower eyelid and anchored to the temporal fascia on the same side and to the frontalis muscle on the opposite side when it is impossible to correct the lagophthalmos by a canthoplasty or other local operation on the eyelid.

VARIATIONS IN THE OPERATION

Preserved fascia, Kangaroo tendon and wire have been used, but it is thought that autogenous fascia is superior to any foreign material, and it is easy to obtain.

Additional loops may be put in to the prominence of the cheek, around the mouth or to the angle, but the two simple slings which have been described usually suffice.

The anchorage above may be to the temporal fascia or to the zygomatic arch rather than to the muscle, but this does not permit any movement of the face or even enough to take any slack out of the loops if they stretch or slip a little.

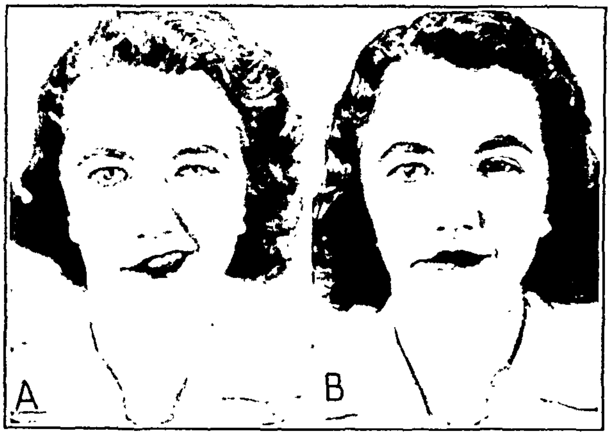

Fig. 5.—*A*, congenital paralysis of twenty years' duration. *B*, the result of a single operation (fascial transplant). The patient has a good personality and nice features and has since married. (The difference in the palpebral features is made more noticeable by the squinting of the normal lids because of the strong lights used to take this photograph.)

Older persons with paralysis of long duration may have considerable excess skin. This may be excised by a unilateral face-lifting operation as a separate procedure. It is a little safer to do it before the fascial transplant, but the amount to be excised can be estimated better afterward. Younger patients, or those with paralysis of lesser duration, will usually tighten up the stretched skin spontaneously during the first few postoperative months.

THE EYELIDS AND FOREHEAD

The paralyzed upper lid seldom requires any treatment (unless combined with paralysis of the third nerve) but the sagging lower lid may create a larger palpebral fissure, apparent or actual exophthalmos and a staring expression. The general elevation of the face usually helps this, and nothing else is required in some cases. If this is not sufficient, a small external canthoplasty may be performed, excising a full thickness wedge of the lower lid near the outer canthus. Occasionally it is worth while to put a thin fascial strip horizontally through the lower lid near the tarsal

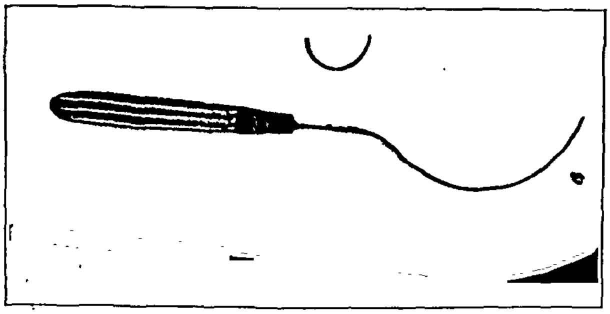

Fig. 6.—Three needles ordinarily used for placing the fascial strips, from above downward: Gallie needle used for anchoring the strips in the temporal muscle; semicircular needle used for placing strip in lower lid, and needle used for placing the main strips in the face. The two lower needles were devised by Dr. Douglas Sanders and are made of bent heavy Kirschner wires with a slot cut in the tip and a handle mounted on the end.

border, anchoring it externally to the temporal fascia above and medially to the opposite frontalis muscle or fascia. These operative corrections do much to prevent irritation to the globe, but it is always advisable for the patients to avoid excessive exposure to strong, cold winds or to dust.

No known operative procedure will restore movement to the forehead. However, if the brow is heavy and low it may be elevated by excising an ellipse of skin in the hair line just above, undermining and sliding that side of the forehead up. A separate strip of fascia may be put in from high in the temporal region, through the brow and then carried high up on the opposite side and anchored.

The amount of movement obtained varies from little to a noticeable amount, the majority of persons obtaining a small range of definitive motion which is of value in expression. The cause of this variation is not entirely understood, though some persons seem to have much thicker and more active muscles than others. An occasional patient will have the fascial loops "freeze" to all the surrounding tissues throughout their length; this almost precludes movement but leaves the face balanced in repose, which is still worth while. The patient's own efforts and general morale have considerable influence on the final result in many cases.

The point of initial overcorrection should be mentioned again. We have never had to loosen any of these loops secondarily (even when the mouth was pulled far over to the paralyzed side), though we have had to tighten them in a few instances and to insert additional loops later in a few others. The single operation suffices in nearly all patients, and it is not entirely clear why an occasional loop will need secondary tightening. It may be due to (*a*) stretching of the fascia (or not using wide enough strips); (*b*) the loops cutting through some soft tissue above or below (the reason for encompassing as much soft tissue at either end as possible), or (*c*) persistent overactivity on the normal side.

The most dramatic results are obtained in total paralysis, but worth while results have been obtained in partial paralysis (where nerve operations were contraindicated). In the latter, however, the closer the expression is to normal, the less is to be expected from any operative procedure—since the net gain will be less.

The chief disadvantages of the operation are (*a*) the occasional necessity of secondary adjustments outlined previously and (*b*) the fact that, in common with all other operative measures it does not restore completely normal movements to the permanently paralyzed face.

Among the advantages of the operation may be listed (*a*) its simplicity and directness; (*b*) its early, definite results; (*c*) the absence of resultant annoying tics or mass actions and the minimal possibility of complete failure; (*d*) it can be used later when nerve operations have not been as successful as anticipated or desired; (*e*) it can be used in conjunction with operations on the nerves; (*f*) it can be used in practically all patients, regardless of the cause or duration of the paralysis, and (*g*) it does not produce any additional disability or visible scars.

SUMMARY

Additional observations have been made on the use of the temporal muscle and strips of fascia lata in the treatment of facial paralysis.

DIPHENHYDRAMINE HYDROCHLORIDE ("BENADRYL HYDROCHLORIDE")

Report on Its Use in One Hundred and Thirty-Seven Patients

LESTER S. BLUMENTHAL, M.D.
and
MORRIS H. ROSENBERG, M.D.
Washington, D. C.

Recent investigation has shown diphenhydramine hydrochloride (dimethylaminoethyl benzohydryl ether hydrochloride, "benadryl hydrochloride" N. N. R.) to be an efficient histamine antagonist and an antispasmodic of low toxicity. Loew[1] and his associates demonstrated that fatal bronchoconstriction and symptoms of anaphylactic shock following the inhalation of histamine could be prevented in guinea pigs by prior administration of the drug. Elias and McGavack[2] were able to suppress completely the sensitivity of the skin to histamine, as expressed by the wheal and flare reaction, by the oral use of 150 to 300 mg. of the drug daily in nonallergic persons. Feinberg and Friedlander[3] were able to prevent the appearance of dermographism, which was an obstacle in the performance of skin tests in allergic persons, by giving the antihistaminic agent orally prior to the tests. This did not interfere with the interpretation of the cutaneous tests. The same authors[4] later observed only a slight inhibition on experimentally produced histamine wheals when the drug was given orally. This was in contrast to the definite reduction in the whealing reaction which was observed when the agent was applied locally, whether in combination with or preceding solutions of histamine. They suggested that the action of the drug is by displacement of histamine from its site of action and that failure of oral administration to be effective in certain allergic conditions may result because insufficient quantities of the compound reach the site of action. McElin and Horton[5] stated that the symptoms which occur in allergic disorders as a result of the antigen-antibody reaction in the sensitized cell are due to the release of histamine or a histamine-like substance. Therefore it has been suggested that a histamine antagonist could be used in the treatment of such manifestations.

The present study was undertaken in order to evaluate the use of diphenhydramine hydrochloride in conditions which are generally accepted as being allergic as well as in other states which present similar symptoms but which are not necessarily allergic. A preliminary report has been made on the use of this drug in 41 of the cases herein cited.[6] Since that time 99

Clinical Instructor in Medicine, George Washington University School of Medicine (Dr. Blumenthal), and Chief Medical Resident, George Washington University Hospital (Dr. Rosenberg).

[1] Loew, E. R.; Kaiser, M. E., and Moore, V.: Synthetic Benzhydryl Alkaline Ethers Effective in Preventing Fatal Experimental Asthma in Guinea Pigs Subjected to Vaporized Histamine, J. Pharmacol. & Exper. Therap. **83**: 120, 1945. Loew, E. R., and Kaiser, M. E.: Alleviation of Anaphylactic Shock in Guinea Pigs with Synthetic Benzhydryl Alkamine Ethers, Proc. Soc. Exper. Biol. & Med. **58**: 235, 1945.

[2] Elias, H., and McGavack, T. H.: Influence of Dimethylaminoethylbenzhydryl Ether Hydrochloride upon Histamine Flare Reaction, Proc. Soc. Exper. Biol. & Med. **61**: 133, 1946.

[3] Feinberg, S. M., and Friedlander, S.: Relief of Dermographism and Other Urticarias of Histamine Origin by a Synthetic Benzhydryl Alkamine Ether, J. Allergy **16**: 296, 1945.

[4] Friedlander, S., and Feinberg, S. M.: The Effect of Oral and Local Use of Benadryl (Dimethylaminoethylbenzhydryl Ether Hydrochloride) on the Whealing Due to Histamine, Antigen-Antibody Reactions, and Other Whealing Mechanisms: Therapeutic Results in Allergic Manifesations, J. Allergy **17**: 129, 1946.

[5] McElin, T. W., and Horton, B. T.: Clinical Observations on the Use of Benadryl: A New Antihistamine Substance, Proc. Staff Meet., Mayo Clin. **20**: 417, 1945.

[6] Blumenthal, L. S., and Rosenberg, M. H.: Benadryl: A Preliminary Report on Its Use in Thirty-Nine Patients, M. Ann. District of Columbia **15**: 478, 1946.

additional cases have been studied, and the total number is represented in this report. Table 1 gives data on 137 patients, comprising 140 cases, treated with the antihistaminic agent; it records the results obtained in each instance.

Table 1.—*Clinical Use of Diphenhydramine Hydrochloride ("Benadryl Hydrochloride")*

Diagnosis	No. of Patients	Change in Clinical Condition Pronounced Relief	 Moderate Relief	 Slight or No Relief
Urticaria	29	24	1	4
Penicillin reaction	1	1	..	..
Morphine reaction	1	1	..	..
Hay fever	23	15	5	3
Bronchial asthma	12	1	3	8
Contact dermatitis	16	12	4	..
Functional dysmenorrhea	10	5	2	3
Migraine	11	4	2	5
Vasomotor rhinitis	3	1	1	1
Spastic colon	2	2	..	..
Cardiac asthma	2	2	..	..
Pruritus associated with sunburn	3	3	..	..
Generalized pruritus without rash	2	2	..	..
Jaundice	2	..	2	..
Psoriasis	1	..	1	..
Neurodermatitis	3	2	..	1
Atopic eczema	2	1	1	..
Rash of infectious mononucleosis	1	1	..	..
Dermatitis herpetiformis	1	..	..	1
Pityriasis rosea	1	..	..	1
Senile pruritus	1	..	..	1
Angioneurotic edema	1	.	1	..
Ménière's syndrome	1	..	1	..
Tabetic crises	1		..	1
Prevention of transfusion reaction	10	1	1 (7)	2
	140	84	25	31

RESULTS OF TREATMENT

Urticaria.—Twenty-nine patients with urticaria were treated. Of these, 24 received pronounced relief, 1 obtained moderate relief and 4 were not relieved. Table 2 lists the etiologic agents in cases in which these were known. Thirteen cases were due to sensitivity to drugs, 7 to foods, 1 to wool and 8 to unknown causes. The drugs responsible for sensitivity reactions were penicillin, phenobarbital, sulfathiazole, tetanus antitoxin, potassium thiocyanate, insulin, acetylsalicylic acid and theelin. Allergies to these agents are well known, and the use of "benadryl hydrochloride" in the treatment of such allergies has been previously reported.[7] The foods which produced urticaria in these patients were sea food, tomatoes, fowl and eggs. In addition there were 3 cases of food or drug sensitivity without urticaria which were treated with the compound. One was that of a patient in whom there developed a large wheal at the site of injection of penicillin in oil and beeswax, given ten days previously. This wheal rapidly became larger and was associated with severe localized pruritus. The first dose of diphenhydramine hydrochloride stopped the itching, although the lesion continued to get larger. The patient therefore was maintained on the drug orally for three days, during which time the wheal became progressively smaller and then disappeared. A second patient had a known sensitivity to chocolate, characterized by the appearance of sneezing, burning of the roof of the mouth, coryza and lacrimation after eating chocolate. This patient was relieved of these symptoms by taking diphenhydramine hydrochloride. She also found that if she took a capsule of the drug before eating chocolate the symptoms did not appear. In a third patient severe generalized pruritus without rash developed approximately one hour after each of three injections of morphine. This patient was given a 50 mg. capsule of diphenhydramine hydrochloride after the itching developed, and in twenty minutes he was completely free of symptoms. When he received another capsule prior to the next dose of morphine no reaction occurred. The following day morphine was again administered without a prophylactic dose of the antihistaminic agent, and itching did not occur. Nine of these patients were given intravenous injections of diphenhydramine hydrochloride. The use of the drug intravenously will be discussed later in this article.

Hay Fever.—Twenty-three patients with seasonal hay fever were treated. Of these, 15 received pronounced relief, 5 obtained moderate relief and 3 were not benefited. Many previous reports on the use of "benadryl" in hay fever have been made. Levin [7b] noted that the effect of the drug is generally definite, relief being either decided or not present at all. However, 5 of our patients did receive definite relief which was not complete. The action of the drug may vary at different times. Several patients commented that they were on occasion completely relieved of symptoms and at other times received no relief. It has not been our experience that the patients become tolerant to the drug after taking it for a long period of time or that the drug becomes less efficacious as it is used over that period. One patient who usually discontinues playing golf during the hay fever season was able to play without discomfort by taking a 50 mg. capsule of diphenhydramine hydrochloride prior to playing.

Bronchial Asthma.—Of 12 patients with bronchial asthma treated with diphenhydramine hydrochloride only 1 was decidedly relieved by its use. Three were moderately relieved, and 8 showed no improvement at all. Several authors [8] have reported good results with the use of this drug against bronchial asthma, but most reports indicate that the agent is not particularly effective against this disease. However, we believe that the use of the compound is worth while because an occasional patient is benefited. It was noted that many of the patients who did not respond to the

Table 2.—*Etiology of Urticaria in Patients Treated with Diphenhydramine Hydrochloride*

	No. of Patients	Pronounced Relief	Moderate Relief	Slight or No Relief
Drugs				
	3	2	..	1
	2	1	..	1
	3	2	..	1
	1	..	..	1
	1	1	..	..
Insulin	1	1	..	..
Acetylsalicylic acid	1	1	..	..
Theelin	1	1	..	..
Foods				
Seafood	4	3	1	..
Tomatoes	1	1	..	..
Fowl	1	1	..	..
Eggs	1	1	..	..
Wool	1	1	..	..
Etiology unknown	8	8	..	..
	29	21	1	4

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[7] (*a*) Logan, G. B.: The Use of Benadryl in Treating Some of the Allergic Diseases of Childhood, Proc. Staff Meet., Mayo Clin. **20**: 436, 1945. (*b*) Levin, S. J.: Betadimethylaminoethyl Benzhydryl Ether Hydrochloride (Benadryl): Its Use in Allergic Diseases, J. Allergy **17**: 145, 1946. (*c*) Gastineau, C. F., and Leavitt, M. D.: Treatment of Allergy to Insulin with Benadryl: Report of One Case, Proc. Staff Meet., Mayo Clin. **21**: 316, 1946. (*d*) McElin and Horton.[5]

[8] (*a*) McGavack, T. H.; Elias, H., and Boyd, L. Influen
of Dimethylaminoethyl Benzhydryl Ether Hydrochlor ryl) u
Normal Persons and upon Those Suffering from s of
Autonomic Nervous System, J. Clin. Med. 946.
Schwartz, E., and Levin, L.: B l Ether H Benad
in the Symptomatic Treatment y, New Y Med.
1233, 1946. (*c*) Levin.[7b]

medicament were made extremely drowsy and were able to sleep. Examination of the chest at that time showed no change in the physical observations. It is considered that the drug acted as a sedative in these cases and that no bronchial relaxation occurred.

Contact Dermatitis.—Sixteen patients with contact dermatitis were treated. Twelve of these received pronounced relief and 4 were moderately improved. The reported effects of the use of diphenhydramine hydrochloride in contact dermatitis vary greatly. Most of the series reported have been small in number. Some investigators have considered [9] that the drug has no place in the treatment of this condition. Others [7b] have reported good results in the relief of the associated pruritus. From the results that we have obtained, we believe that there is a definite indication for the use of the drug in treatment of contact dermatitis.

Functional Dysmenorrhea.—Ten patients with functional dysmenorrhea were treated. Five received decided relief, 2 obtained moderate relief and 3 were not relieved. According to Selle [10] histamine, even in extremely high dilutions, is a powerful stimulant of the uterine musculature. We contemplate undertaking studies to determine whether or not there is an increase in the level of histamine in the blood at the time of menstruation. If this is true, the use of an antihistaminic agent against dysmenorrhea will rest on a sound physiologic basis. The antispasmodic action of the drug and the psychic factor of any type of therapy in dysmenorrhea also must be evaluated in determining the effiicacy of the therapeutic agent. Other reports [11] vary as to the efficacy of diphenhydramine hydrochloride in this condition. There has been no report to our knowledge of results with this drug in a large series of such cases, and until such a report is available no real decision can be reached.

Migraine.—Eleven patients with typical migraine headaches were treated. In 4 the relief was pronounced, in 2 moderate; 5 received no relief. All these patients had previously [12] been relieved by the use of dihydroergotamine.[13] All were told to take 100 mg. of diphenhydramine hydrochloride orally at the first symptom of their migraine attack. In 3 instances this dosage had to be repeated in four hours because the headache returned. McElin and Horton [5] report the use of the drug in 3 cases of migraine without relief. Levin [7b] reported relief in 11 of 18 patients with migraine. He stated that the effect of the drug varied in most of the patients who were relieved and that in several no relief resulted from a dosage which was the same or larger than one which had previously been effective.

Vasomotor Rhinitis.—Three patients with vasomotor rhinitis were treated. One, the patient whose sensitivity to chocolate has been discussed previously, experienced pronounced relief; 1 obtained moderate benefit and 1, no relief.

Spastic Colon.—Diphenhydramine hydrochloride was used in 2 cases of spastic colon with definite relief of symptoms. McGavack, Elias and Boyd [8a] used this agent on 7 patients with spastic colon with excellent relief of symptoms in 3 and improvement in 4.

The same authors [8a] have shown that the compound has a pronounced depressant effect on the presence of both free and total gastric acid in patients who showed free acid prior to the administration of the drug. Moreover, there was little or no response to injections of histamine after the patients had taken the antihistaminic agent orally within one hour before the test. Theoretically the threefold action of the drug, (1) antihistaminic, (2) antispasmodic and (3) sedative, would suggest its use in peptic ulcers and other conditions associated with hyperacidity. Thus far no extensive study of the use of diphenhydramine hydrochloride in peptic ulcers has been reported.

Cardiac Asthma.—Two patients who had persistent cough and mild asthmatic wheezes, which persisted after their congestive cardiac failure was controlled, were given the antihistaminic agent with disappearance of these symptoms. Relief of symptoms in these cases suggests that the compound acted to relieve the bronchospasm that may have accompanied the cardiac failure.

Miscellaneous.—A group of patients with miscellaneous conditions, in all of which there was pruritus, were treated. Three patients with sunburn were definitely relieved of pruritus. Two patients with generalized pruritus without rash were also relieved. Two patients with jaundice and 1 with psoriasis obtained moderate relief. In these it was difficult to determine what role sedation played in the production of relief, because all 3 became extremely sleepy after the administration of one 50 mg. capsule of the drug. Three patients with neurodermatitis were treated, with pronounced relief in 2 and no relief in 1. Treatment of 2 patients with atopic eczema resulted in well defined relief for 1 and moderate relief for the other. One patient with a pruritic rash associated with infectious mononucleosis was decidedly relieved. This case has been previously reported in greater detail.[6] Three patients who had, respectively, dermatitis herpetiformis, pityriasis rosea and senile pruritus were treated without relief. One patient with angioneurotic edema and 1 with Ménière's syndrome were treated with moderate relief. A patient with severe tabetic pains that occurred during the febrile phase of malarial therapy was not relieved by diphenhydramine hydrochloride. Nor was it possible to prevent the pains when the drug was given prophylactically.

Prevention of Transfusion Reaction.—The following case, which has been previously reported,[6] is included here in detail for the purpose of completeness.

Case 1.—E. W., a white man aged 67, was hospitalized in May 1945 for treatment of a bleeding peptic ulcer. During hospitalization he was given five transfusions of compatible whole blood. After each transfusion he had a severe chill, an elevation in temperature to 103 F. and generalized urticaria. In April 1946 operative intervention was performed because of a perforated appendix. During the early part of the patient's stormy course he was transfused twice with compatible whole blood. Each transfusion was followed by a severe chill, temperature of 103 F. and urticaria. When it again became necessary to give a transfusion, the patient was given 50 mg. of diphenhydramine hydrochloride orally twenty minutes before the transfusion was started. The patient had no reaction following the transfusion. Several days later this procedure was repeated with a similar result.

We have since attempted prophylactic treatment with this drug in other patients who have had blood transfusion reactions but required further transfusions. We have treated 4 such patients, in whom the transfusion of whole blood had been followed by reactions consisting of fever (over 101 F.) and shaking chills. In each of the patients a second transfusion of compatible whole blood was preceded by the administration of 50 mg. of diphenhydramine hydrochloride orally; there were no reactions to the transfusions. Another patient received protein hydrolysate intravenously on two successive days, each injection being followed by the appearance of generalized urticaria. On the third day, when 50 mg. of diphenhydramine hydrochloride was given orally prior to the infusion of protein hydrolysate, no urticarial reaction followed the transfusion.

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[9] Epstein, S.: Treatment of Allergic Conditions with Pyribenzamine and Benadryl, Wisconsin M. J. **45**: 489, 1946. Schwartz and Levin.[5b]

[10] Selle, W. H.: Histamine: Its Physiological, Pharmacological and Clinical Significance, Texas Rep. Biol. & Med. **4**: 138, 1946.

[11] McElin and Horton.[5] McGavack, Elias and Boyd.[8a]

[12] Horton, B. T.; Peters, G. A., and Blumenthal, L. S.: A New Product in the Treatment of Migraine: A Preliminary Report, Proc. Staff Meet., Mayo Clin. **20**: 241, 1945. Blumenthal, L. S.: Migraine Headache: Treatment of Fifty-One Patients with Dihydroergotamine, M. Ann. District of Columbia, **16**: 10 (Jan.) 1947.

[13] Supplied by Sandoz Chemical Works, New York.

Another patient who had received a large number of transfusions was treated.

Case 2.—L. S., a Negro woman aged 40, was six months pregnant. On admission she had mild diabetes, albuminuria, severe hypoproteinemia and anemia. Her pregnancy was terminated surgically, following which her course was progressively downhill. She died in uremia. Permission for an autopsy was not granted.

Table 3 shows the types of transfusions received by this patient. We have classified the degree of transfusion reaction as follows: Severe: shaking chill, temperature above 101 F., dyspnea, apprehension, nausea, vomiting and tachycardia. Moderate: chilly sensation but no shaking chill, temperature below 101 F. and nausea with or without vomiting during or immediately following the transfusion or within an hour after the transfusion. Slight: slight chilly feeling, no fever, no great interference with the sense of well-being.

From the results obtained we are unable to draw any definite conclusions in regard to the use of diphenhydramine hydrochloride prophylactically in the prevention of transfusion reaction in this patient. It is true that all three of the severe reactions occurred when the drug was not used. In two of the three instances in which a moderate reaction occurred there is a possible explanation because of the interval between the administration of the drug and of the transfusion. Our clinical impression is that the use of the compound prevented this patient from having severe reactions.

Table 3.—*Use of Diphenhydramine Hydrochloride ("Benadryl Hydrochloride") in Prevention of Transfusion Reactions in One Patient*

Case 2	No. of Transfusions	Reaction			
		Severe	Moderate	Slight	None
Plasma					
With diphenhydramine..........	16	..	..	1	15
Without diphenhydramine......	5	2	..	..	3
Albumin					
With diphenhydramine..........	9	..	1	..	8
Without diphenhydramine......	2	1	..	1	..
Blood					
With diphenhydramine..........	7	..	1*	..	6
Without diphenhydramine......	1	..	..	..	1
Protein hydrolysate					
With diphenhydramine..........	15	..	1†	3	11
Without diphenhydramine......	8	..	..	2	6

* Diphenyhydramine hydrochloride given ninety minutes prior to transfusion.

† Diphenhydramine hydrochloride given three hours prior to transfusion.

In 3 patients an attempt was made to prevent recurrent transfusion reactions by the prophylactic use of intravenous injections of the drug. Table 4 shows the results obtained.

Case 3.—D. P., a white man aged 37, had a tendency to bleed since birth (following circumcision; frequent nose bleeds; pronounced bleeding after extraction of a tooth and after an appendectomy). A diagnosis of idiopathic thrombocytopenic purpura was made when he was 24 years of age, at which time a splenectomy was performed. Between the ages of 24 and 28 the patient received twenty-eight blood transfusions. With each transfusion he had a severe shaking chill and elevations in temperature to 102 to 106 F. The chills usually lasted from fifteen minutes to two hours. The reactions were frequently accompanied by backache, urticaria and herpes zoster.

Table 4.—*Intravenous Use of Diphenhydramine Hydrochloride in Prevention of Blood Transfusion Reactions*

Case	Type of Transfusion	No. of Transfusions	Reaction			
			Severe	Moderate	Slight	None
4	Whole blood					
	With diphenhydramine....	5	..	..	..	5
	Without diphenhydramine	12	3	..	4	5
5	Whole blood					
	With diphenhydramine....	1	1	..	..	..
	Without diphenhydramine	1	1	..	..	..
3	Whole blood					
	With diphenhydramine....	5	4	..	..	1
	Without diphenhydramine	1	1	..	..	..
	Blood with plasma removed					
	Without diphenhydramine	5	..	..	..	5

The patient was admitted to this hospital on Oct. 3, 1946 because of bleeding from the gastrointestinal tract. On Oct. 10, 1946 he was given a transfusion of compatible whole blood preceded by 50 mg. of diphenhydramine hydrochloride orally. After receiving 180 cc. of blood the patient had a severe shaking chill; the temperature rose to 101.2 F., the pulse rate was 110, and he was sweating profusely. On Oct. 12, 1946 he was given another transfusion of compatible whole blood without the medicament. After 250 cc. of this transfusion had been given he again experienced a similar severe reaction. That same afternoon he was given the remainder of the blood which had caused a reaction in the morning. This time the transfusion was preceded by the administration of 30 mg. of diphenhydramine hydrochloride intravenously in 100 cc. of isotonic solution of sodium chloride; a reaction did not follow this transfusion.

On Oct. 14, 1946 the patient was given the remainder of the blood to which he had had a reaction on Oct. 10, 1946, and again the transfusion was preceded by the intravenous use of the drug. About thirty-five minutes after the transfusion the patient had a severe reaction characterized by the same manifestations. On Octber 17 and 20 the procedure was repeated, and each time the patient had a severe reaction to the transfusion. Following these experiences the patient was given the red blood cells from 500 cc. of compatible blood, from which the plasma had been removed. Diphenhydramine hydrochloride was not given prophylactically, and a reaction did not occur. This type of transfusion has been repeated on five occasions without subsequent reactions. It is considered that the drug was ineffective in preventing transfusion reactions in this patient.

Case 4.—H. D., a Negro boy aged 13 whose disease was diagnosed as aplastic anemia, received his first transfusion of whole blood without reaction. His second transfusion was interrupted because of a severe reaction. During the five weeks which preceded the patient's death he was given a total of seventeen blood transfusions. Five of these were preceded by the intravenous administration of diphenhydramine hydrochloride, and twelve were not. We believe that the drug may have aided in preventing reactions in this patient.

Case 5.—J. S., a Negro man aged 50, had chronic myelogenous leukemia. Following the administration of 150 cc. of a transfusion of compatible whole blood the patient had a severe reaction. On the next day the remainder of the same blood was given, preceded by 30 mg. of diphenhydramine hydrowere negative for pathogens. The blood cholesterol level was 253 mg., sugar 77 mg., urea nitrogen 16.4 mg. and nonprotein nitrogen 50 mg. per hundred cubic centimeters. The icterus index was 5.5 units. The hemoglobin level was 71 per cent (Sahli), the red blood cell count 4.04 millions, the white blood cell count 11,000, with segmented polymorphonuclears 16 per cent, stabs 3 per cent and lymphocytes 81 per cent. Urinalysis was normal except for a 2 plus sugar reaction.

A boy 2 years of age was given two "analbis" suppositories for otitis media and pharyngitis. About eighteen hours after the second suppository he went into severe collapse, followed the next day by fever and lethargy. He recovered after supportive measures and BAL therapy. The total dosage of BAL per kilogram of body weight is one of the largest ever given. This drug was administered at the suggestion of Dr. W. T. Salter, professor of pharmacology at the Yale University School of Medicine, in the belief that the unknown toxic agent might be a heavy metal. Whether its use was of any value is a matter of conjecture.

Case 4.—This case is contributed by Dr. Dorothy H. Andersen of Babies Hospital, New York, whose summary of the case is quoted.

A girl aged 2½ years had been well until Dec. 18, 1946, at which time there developed a cough, an elevation of temperature to 102 F., and an apparent infection of the upper part of the respiratory tract. She vomited twice. On examination she was moderately dehydrated; the pharynx was red and swollen; the liver was not palpable. She was given rectal fluids, acetylsalicylic acid and three suppositories containing the bismuth salt of diallylacetic acid in the course of about twenty-four hours. By December 20 she appeared well. At 3 a. m. December 21 she awoke suddenly and vomited. Later that day she was admitted to Babies Hospital because of drowsiness. She was semicomatose on admission; the abdomen was rounded and soft, the liver large and somewhat tender. She was treated with clyses and a transfusion, but on December 22 she became cyanotic, with slow Cheyne-Stokes respirations, and died. The highest temperature was 100 F.

The chief postmortem observations were a large liver weighing 720 Gm., which was mottled bright red and yellow, mild ascites (100 cc.) and edema of the peritoneal fat and connective tissue, decided edema of the gastric mucosa and extreme cerebral edema. There was no icterus. On microscopic examination, the liver showed acute early necrosis and the renal tubules contained much fat. There was a mild interstitial pneumonia, and examination of other organs revealed little that was unusual. There was no excess of bismuth in the liver. Comparison of slides from cases 1, 2 and 4 by Dr. Andersen and me revealed a close resemblance.

COMMENT

[illegible] itories bear[illegible] [illegible]he same lot number as those given to [illegible] 1, 2 [illegible] [illegible]d.[6] The bismuth content w[illegible] Gm. against .0225 Gm.). [illegible] found. The only [illegible]y acid in quantities [illegible] what is identified [illegible]dienecarboxylic [illegible]lylacetic acid.

It is not believed that bismuth is the agent responsible for the toxic action of these suppositories for several reasons. It was present in only small amounts in the organs on which analyses were performed (cases 2 and 4). There were no inclusion bodies in the renal tubular epithelium, nor was there any evident nephritis.[10] Finally, there is no convincing evidence that bismuth has ever caused hepatic damage of the type here described, the so-called bismuth hepatitis[11] doubtless being an instance of syringe transmission of virus hepatitis.

The type of damage to the liver seen at autopsy in these patients is not compatible with virus hepatitis or any of the usual hepatotoxins. The assumption that the heptadienecarboxylic acid or a contaminant thereof may be a hitherto undescribed hepatotoxin seems plausible.

Animal experimentation has not been revealing to date, largely due to inability to secure adequate material. Further studies are in progress in the Department of Pharmacology of the Yale University School of Medicine. The suppositories have been recalled from the market.[12]

CONCLUSION

Four cases are described in which profound collapse, fever, central nervous system symptoms and in 3 cases death followed the administration of suppositories containing the bismuth salt of heptadienecarboxylic acid (diallylacetic acid) for the treatment of infections of the upper part of the respiratory tract in children.

Council on Physical Medicine

The Council on Physical Medicine has authorized publication of the following article. Howard A. Carter, *Secretary.*

FEDERAL COMMUNICATIONS COMMISSION ANNOUNCES ITS REGULATIONS FOR SHORT WAVE DIATHERMY APPARATUS

After several years of discussions, conferences and hearings, as well as yeoman work on the part of the Radio Technical Planning Board of the radio industry, the Federal Communications Commission on May 9, 1947 released Public Notice number 7722 entitled "Order with Respect to Medical Diathermy and Industrial Heating Equipment and Notice of Proposed Rule Making with Respect to Miscellaneous Equipment."

This document assigned three frequencies, in harmonic progression, for medical diathermy and industrial heating. Channels are 13.66, 27.33 and 40.98 megacycles, corresponding to approximately 22, 11 and 7½ meters wavelength respectively. The widths of the channels are approximately 15, 320 and 40 kilocycles respectively. Harmonic and spurious radiations on frequencies other than those specified shall be suppressed, so that radiation does not exceed a strength of 25 microvolts per meter at a distance of 1,000 feet or more from the diathermy equipment causing such radiation.

Another channel has been assigned, namely 2,450 megacycles, corresponding roughly to 12.2 cm. wavelength. A frequency in the neighborhood of 6 megacycles will be announced later, and frequencies of 915, 5,850, 10,600 and 18,000 megacycles have also been allocated for industrial, scientific and medical use.

At present the commission has not found it necessary to make rules applicable to surgical diathermy.

[illegible] A., and Maechling, E.: Inclusions in Renal Epi[illegible]is Following the Use of Certain Bismuth Preparations, Am. J. [illegible]7, 1934.

[illegible] G. V., and Reynolds, W. J.: Bismuth Hepatitis—A Sur[illegible]undred and Twenty-One Cases, J. A. M. A. **120:** 343

[illegible] a letter dated Feb. 17, 1947 from Mr. Herbert P. [illegible]spector of Drugs, Devices and Cosmetics, State of [illegible]ood Commission.

The commission ruled that all diathermy equipment manufactured in the future shall meet these regulations if the equipment is to be used without a license. Manufacturers may now submit apparatus to the Laurel Laboratory of the Federal Communications Commission and receive "type-approval" of the equipment if it meets the rules and regulations. Using a type-approved apparatus, a physician need not obtain an operating license. If a physician is using existing equipment operating on a frequency not assigned, shielding must be employed and certification obtained. This rule refers to apparatus that was purchased prior to July 1, 1947.

Section 18.51 of the Rules and Regulations of the Federal Communications Commission under the caption "Existing Equipment" indicates that there are generally two methods of operating diathermy equipment in compliance with these rules for equipment manufactured after July 1, 1947. The first method is to operate within assigned frequency bands using equipment either "type-approved" or certified by a competent engineer in accordance with the applicable sections of the rules. The second method is to operate on any frequency provided the equipment is operated in a shielded room with a filtered power supply and all radiation on any frequency limited to 15 microvolts per meter at a distance of 1,000 feet or more from the diathermy equipment. Operation in this manner also requires certification by a competent engineer.

A physician owning and operating a diathermy apparatus manufactured prior to July 1, 1947 may continue to operate for a period of five years, provided the equipment does not interfere with authorized radio services. If interference is reported, the physician is responsible for eliminating the disturbance to radio communications. This may be accomplished in some instances by readjusting the existing diathermy appliance. If no means can be provided to eliminate the interference, then the physician becomes subject to the new rules and regulations. That is to say, he must screen the apparatus or acquire frequency controlled equipment.

More than ten years ago the Federal Communications Commission was requested by several radio communication agencies to formulate regulations to control man-made interference caused by diathermy equipment. When short wave diathermy was first marketed, the wavelengths employed were so short that the manufacturers did not anticipate any serious complications. In other words, that part of the radio spectrum used by diathermy was outside the region then generally employed for communications.

It was not long until the amateur radio operators were using these channels for communications, and they observed interference originating from diathermy equipment. The problem would not have been so confusing had these radiofrequency energies been restricted to two or three channels; but the manufacturers of diathermy equipment, being guided by the early clinical investigators, selected channels of several lengths for therapeutic purposes. Time and effort in research eventually established the therapeutic value of the physical agent. The Council on Physical Medicine reached the opinion after careful study that short wave diathermy was merely another means of applying heat to a patient and that it did not matter what wavelength between 30 and 5 meters was employed.

As radio communications expanded and more channels were needed for services such as ship to shore, airplanes to ground, police station to squad car and countless governmental and private services in the interests of the public, nearly all available channels have been assigned for such purposes.

Television was assigned channels and it became an important factor. Diathermy interfered with television in some instances, making the picture in the television receiver indistinguishable.

In 1939 the Federal Communications Commission called a meeting of the interested bodies, who met at Harkness Hall, Columbia University, New York. The representatives present entered into conversations with the object in view of reaching a solution to the problem.

While the manufacturers of diathermy equipment had no desire to make apparatus which would interfere with communications, there seemed to be no simple solution. Screened rooms were suggested, but they were high priced and inconvenient to install. Except in rare instances, screening diathermy apparatus to prevent interference was ruled out as expensive and cumbersome. There would be no interference if all of the radiofrequency energy generated by diathermy could be used efficiently for treatment purposes. Unfortunately, such diathermy apparatus has not been developed as will not radiate energy into space.

In the meantime, radiofrequency energy for industrial purposes had come into general use. Since the demands for communication channels were so great, considerable pressure was put on the Federal Communications Commission to provide as many channels as possible. Fortunately, all diathermy apparatus can be operated on the same radio channel or channels and there is no interference of one unit with another. Hence the interference problems of diathermy and industrial heating were considered one and the same by the commission.

Many installations of diathermy apparatus are used in steel buildings. The buildings themselves in many instances act as shields, and interference with radio communications is greatly reduced. It is relevant to mention that screening may not always act effectively as a shield when there are breaks or openings in the screen. Poor contacts along the door jamb may permit excessive amounts of leakage and thereby cause interference over long distances.

Probably the greatest problem of interference to radio communication is in the congested areas. For example, diathermy apparatus which is not controlled might be used in a physician's office in an apartment building while a resident in an adjacent apartment either on the same floor, upstairs or downstairs, might choose to operate a television receiver. The distance between a television set and the diathermy equipment might conceivably be only the width of the partition. An ordinary partition between the two apartments would be no barrier, since radio energy will go right through it. Without knowing, the physician might cause considerable annoyance to his neighbor. As a matter of fact, the neighbor might be a fellow physician. Indeed, the television receiver may belong to a physician who is causing the interference. Situations such as these might cause poor public relations.

Countless examples might be cited where interference occurs. Probably the most frequent at the present time is interference by stray radio frequency energy with police communications. Diathermy apparatus may be housed in a wooden building and the receivers on the police squad cars cruising in the streets will pick up the radio signal having the greatest field strength when frequency modulation receivers are employed. When amplitude modulation receivers are employed, serious interference will result even though the field strength of the signal radiated by the diathermy equipment is as low as one twentieth of the field strength of the police radio signal. The Federal Communications Commission has received several complaints of this interference with radio receivers on police mobile units.

Some discussion has been raised as to the relative merits of (1) the health of the nation and (2) the protection of the public by the police. While a physician may be treating disease, the police might be hampered by interference caused by a diathermy apparatus in protecting the property of the public. Fortunately, problems of this nature, if indeed they exist, can now be overcome by compliance with the rules and regulations of the Federal Communications Commission.

The medical profession and the manufacturers of diathermy are to be congratulated on the successful cooperation with the Federal Communications Commission and the representatives of other radio industries on reaching an amicable solution of this perplexing problem in the field of radio communications.

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SATURDAY, SEPTEMBER 6, 1947

FRACTIONATION OF BLOOD FOR THERAPEUTIC PURPOSES

The value of blood in the prevention of disease rarely depends on the whole tissue. Cohn[1] points out that it more often depends on one or more of the cellular, protein or smaller organic constituents. The need is for quite different constituents of the blood in hemophilia or hypertension, measles or anemia, hemorrhage or infectious hepatitis, edema, shock or hypoproteinemia. The fractionation of plasma has made available the albumins for use in shock and the specific globulins of value in measles, hemophilia, blood typing and blood clotting. The method has also succeeded in separating many of the smaller molecules which are not free in the blood stream but are in highly specific, more or less labile combination with the larger proteins. The fractionation process[2] developed at Harvard Medical School yields all the components of human plasma in five major fractions. The physicochemical system on which the separation depends involves the principle determining electrostatic interactions between proteins and neutral salts, which generally lead to increased solubility, and interactions with less polar organic liquids, which generally lead to precipitating action. The balance between these forces has made possible the definition of conditions leading to far sharper separations than had previously been possible.

The method applied to plasma yields fibrinogen, which is the structural element of blood clotting and is concentrated in fraction I. All the prothrombin, which, converted to thrombin, transforms fibrinogen into fibrin, all the immune globulins for which tests have been carried out, the isohemagglutinins and Rh antibodies, and probably many other components of plasma which are not yet recognized are contained in fractions II and III. The remaining globulins are concentrated in fraction IV.

The protein fraction of blood plasma known as gamma globulin has, according to Stokes,[3] assumed a greatly enhanced significance. By the method of separation of this fraction a number of antibodies in adult blood plasma against foreign protein antigens such as viruses, bacteria, toxins and pollens has been obtained. The process of fractionation of gamma globulin not only separates but also concentrates the antibodies. The concentration of antibodies in the gamma globulin thus prepared is about twenty-five times that of normal pooled plasma. The plasma pools developed by the American Red Cross showed a surprisingly uniform titer of antibodies against the infectious agents endemic to the geographic area in which the blood donor resides. Stokes points out that following the influenza A epidemic of December 1943 the gamma globulins from all areas of the United States gave evidence of a general increase in the antibodies against the influenza A virus. A direct relationship between the height of such antibodies and individual resistance to influenza A has been demonstrated. The general level of donor's antibodies in any population may thus provide an indication of its susceptibility to the epidemic disease as well as evidence of a recent epidemic wave of influenza. Stokes calls attention to the fact that many epidemic diseases of childhood gradually immunize the general population, both by apparent and by inapparent cases, and leave in passage considerable amounts of antibodies in adult plasma. When such adult plasma is pooled from thousands of individuals it probably contains fairly uniform titers of antibodies. Gamma globulin from fractionated pools of plasma concentrates and preserves such antibodies in a readily usable form, which thus far apparently has been free from the danger of serum hepatitis.

Minot and Taylor[4] point out that fractions I, II and III of Cohn's fractions showed antihemophilic activity in studies made in vitro. The injection of preparations of fraction I was comparable in antihemophilic effect to that obtained following the injection of whole blood or plasma. These authors also point out that, in hemophilia, control of local hemorrhage is as important as the control of the blood coagulation time. Antihemophilic globulin has some hemostatic properties. Its action, however, is a matter of minutes to develop. On the other hand, thrombin preparations, which act directly on fibrinogen to produce fibrin clots, require only seconds to produce this effect. For this reason Minot and Taylor believe that thrombin is an ideal hemostatic agent. Preparations rich in prothrombin can be obtained by suitable fractionation of the plasma globulins. Prothrombin can be converted to thrombin by action with tissue thromboplastin derived from brain, lung, placenta or other tissues. The thrombin so obtained may be spread on or impregnated into sterile gauze, fibrin foams or absorbable cellulose and applied with pressure to the bleeding point. A thrombin preparation has been made by Parfentjev from rabbit plasma by salting out procedures not requiring activation with thromboplastin. Pohle and Taylor[5] prepared a similar product from the plasma of swine, steers and human beings, which, according to the authors, is an extremely potent hemostatic agent.

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[1] Cohn, E. J.: Blood Proteins and Their Therapeutic Value, Science **101**: 51 (Jan. 19) 1945.

[2] Cohn, E. J.: The Separation of Blood into Fractions of Therapeutic Value, Ann. Int. Med. **26**: 341 (March) 1947.

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5. Goormaghtigh, N.: Existence of Endocrine Gland in Media of Renal Arteries, Proc. Soc. Exper. Biol. & Med. **42:** 688, 1939.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 North Dearborn Street - - Chicago 10, Ill.

Cable Address . . . . "Medic, Chicago"

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SATURDAY, SEPTEMBER 6, 1947

FRACTIONATION OF BLOOD FOR THERAPEUTIC PURPOSES

The value of blood in the prevention of disease rarely depends on the whole tissue. Cohn[1] points out that it more often depends on one or more of the cellular, protein or smaller organic constituents. The need is for quite different constituents of the blood in hemophilia or hypertension, measles or anemia, hemorrhage or infectious hepatitis, edema, shock or hypoproteinemia. The fractionation of plasma has made available the albumins for use in shock and the specific globulins of value in measles, hemophilia, blood typing and blood clotting. The method has also succeeded in separating many of the smaller molecules which are not free in the blood stream but are in highly specific, more or less labile combination with the larger proteins. The fractionation process[2] developed at Harvard Medical School yields all the components of human plasma in five major fractions. The physicochemical system on which the separation depends involves the principle determining electrostatic interactions between proteins and neutral salts, which generally lead to increased solubility, and interactions with less polar organic liquids, which generally lead to precipitating action. The balance between these forces has made possible the definition of conditions leading to far sharper separations than had previously been possible.

The method applied to plasma yields fibrinogen, which is the structural element of blood clotting and is concentrated in fraction I. All the prothrombin, which, converted to thrombin, transforms fibrinogen into fibrin, all the immune globulins for which tests have been carried out, the isohemagglutinins and Rh antibodies, and probably many other components of plasma which are not yet recognized are contained in fractions II and III. The remaining globulins are concentrated in fraction IV.

The protein fraction of blood plasma known as gamma globulin has, according to Stokes,[3] assumed a greatly enhanced significance. By the method of separation of this fraction a number of antibodies in adult blood plasma against foreign protein antigens such as viruses, bacteria, toxins and pollens has been obtained. The process of fractionation of gamma globulin not only separates but also concentrates the antibodies. The concentration of antibodies in the gamma globulin thus prepared is about twenty-five times that of normal pooled plasma. The plasma pools developed by the American Red Cross showed a surprisingly uniform titer of antibodies against the infectious agents endemic to the geographic area in which the blood donor resides. Stokes points out that following the influenza A epidemic of December 1943 the gamma globulins from all areas of the United States gave evidence of a general increase in the antibodies against the influenza A virus. A direct relationship between the height of such antibodies and individual resistance to influenza A has been demonstrated. The general level of donor's antibodies in any population may thus provide an indication of its susceptibility to the epidemic disease as well as evidence of a recent epidemic wave of influenza. Stokes calls attention to the fact that many epidemic diseases of childhood gradually immunize the general population, both by apparent and by inapparent cases, and leave in passage considerable amounts of antibodies in adult plasma. When such adult plasma is pooled from thousands of individuals it probably contains fairly uniform titers of antibodies. Gamma globulin from fractionated pools of plasma concentrates and preserves such antibodies in a readily usable form, which thus far apparently has been free from the danger of serum hepatitis.

Minot and Taylor[4] point out that fractions I, II and III of Cohn's fractions showed antihemophilic activity in studies made in vitro. The injection of preparations of fraction I was comparable in antihemophilic effect to that obtained following the injection of whole blood or plasma. These authors also point out that, in hemophilia, control of local hemorrhage is as important as the control of the blood coagulation time. Antihemophilic globulin has some hemostatic properties. Its action, however, is a matter of minutes to develop. On the other hand, thrombin preparations, which act directly on fibrinogen to produce fibrin clots, require only seconds to produce this effect. For this reason Minot and Taylor believe that thrombin is an ideal hemostatic agent. Preparations rich in prothrombin can be obtained by suitable fractionation of the plasma globulins. Prothrombin can be converted to thrombin by action with tissue thromboplastin derived from brain, lung, placenta or other tissues. The thrombin so obtained may be spread on or impregnated into sterile gauze, fibrin foams or absorbable cellulose and applied with pressure to the bleeding point. A thrombin preparation has been made by Parfentjev from rabbit plasma by salting out procedures not requiring activation with thromboplastin. Pohle and Taylor[5] prepared a similar product from the plasma of swine, steers and human beings, which, according to the authors, is an extremely potent hemostatic agent.

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In contrast to the kidney, the liver is one of the simplest glandular structures. Its oxygen uptake is determined by its metabolic activity. The rise in total metabolism after a meal of high protein content is due almost entirely to intense hepatic activity. Clinicians therefore might reason that a high protein diet would retard the recovery of a diseased liver by increasing its metabolic activity; experience shows however that a high protein diet is beneficial in hepatitis and cirrhosis, even though it makes the liver work harder.

As is well known, the blood flow to the liver comes from two sources—the portal vein and the hepatic artery. The portal flow may be diverted wholly into the inferior vena cava without damage to the liver; and, in dogs, ligation of the hepatic artery causes no apparent damage. Such ligation may have serious effects however on a patient with chronic biliary tract disease. Cirrhosis provides the chief interest in the vascular bed of the liver. While anatomic studies indicate that the arterioles and the portal venules enter the sinuses of the liver lobule separately, the rate of perfusion through the normal portal vein drops a third when pressure in the hepatic artery is raised from 0 to 100 mm. during a double perfusion with oil with portal pressure at 20 mm. In alcoholic cirrhosis the portal blood flow was found to fall 78 per cent when blood flow at 100 mm. pressure was established in the hepatic artery. Perfusion studies made by Dock were interpreted as confirming Herrick's[6] report of greatly increased hepatic arterial inflow in some types of cirrhosis. This is believed to be due to the development of numerous minute arteriovenous fistulas analogous to the spider angiomas in the skin.

Current Comment

GOITER PREVENTION

McClendon and Hathaway[1] demonstrated in analyses made in 1924 that the iodine content of the food in the nongoitrous regions may be 100 per cent higher than that in the goitrous regions. They calculated from the quantity of iodine in the normal thyroid gland and the rate at which a person may drink water that in goitrous regions the iodine should be added up to 1,000 parts per hundred billion or 1 part per hundred million. This can be accomplished by adding 45 Gm. of sodium iodide per million gallons of water. Beaumont and Karns were able to increase the iodine content of turnips by the application of potassium iodide to the soil. The iodide treated plants contained 441 and 950 parts per billion of iodine in the roots and tops respectively, against 165 and 441 parts in chloride treated plots. Whether or not these quantities of iodine in food have therapeutic value has been partly answered by the experiments of Hunziker in Switzerland. Hunziker added potassium iodide to the fertilizer used for the garden from which his family was supplied with such vegetables as spinach, rhubarb, cabbage, lettuce and beans. The iodized vegetables were served to his 5 children ranging in age from 3 to 8 years. As a control 5 children from another family were supplied with vegetables which were raised on soil that was not iodized. Hunziker's graphs of the measurements of the circumference of the neck in the thyroid region show the beneficial influence of the iodized vegetables on the growth of the thyroid gland. Zwick[2] called attention in 1933 to the fact that the administration of even such minute quantities of iodine as are needed for goiter prophylaxis may be followed in some instances by a follicular eruption of pustular character. These cutaneous lesions must be differentiated from the juvenile form of acne, which they resemble. Iodide acne seems to occur more frequently since our drinking water is chlorinated, a circumstance which Zwick explains by the fact that all halogens act as follicular irritants. The possibility of a follicular eruption does not constitute per se a contraindication to attempts at goiter prevention by means of adding iodine to the water supply or to the soil in which vegetables are raised.

STABILITY OF PROTHROMBIN

The current belief that prothrombin disappears rapidly from blood or plasma stored at low temperatures is based on numerous chemical analyses by the generally used one stage method. In this method the time required for clotting after the addition of a large amount of thromboplastin is taken as a measure of prothrombin concentration. Studies based on the use of the more elaborate two stage method of analysis show, in contrast, that prothrombin disappears relatively slowly from stored blood. The latter procedure has been shown to be the more reliable by Ware, Guest and Seegers[1] by actual isolation of the amount of prothrombin indicated in the analysis. Unreliable values for prothrombin obtained by the one stop method of analysis may be attributed to the interfering action of a substance, recently reported to be present in plasma,[2] which accelerates the rate of activation of prothrombin to thrombin by thromboplastin and calcium ions. Crude preparations of this substance have been obtained by chemical fractionation, but the chemical structure is not yet known. Another new factor reported to be present in plasma by these same investigators has been shown to protect prothrombin. Purified prothrombin is unstable at room temperature, whereas the prothrombin in plasma is comparatively stable. Also purified prothrombin is stabilized when it is dissolved in plasma. Progress is steadily being made in preparing in pure form the many substances required for normal blood clotting and in reproducing the clotting reaction in the test tube under strictly controlled conditions.

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ORGANIZATION SECTION

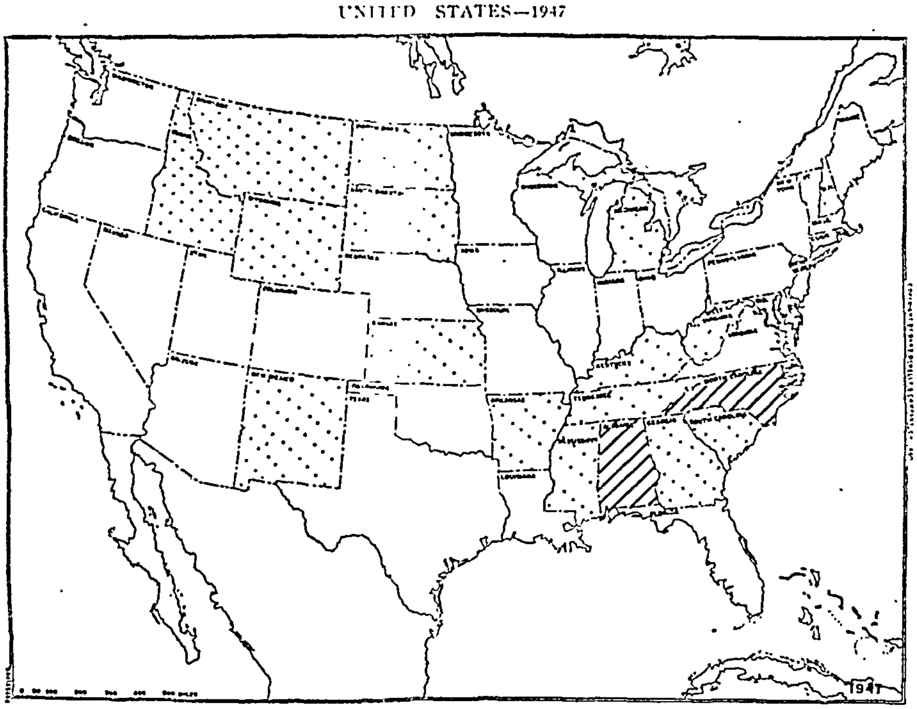
Bureau of Information

LOCATION OF PHYSICIANS

Virginia Shuler
Chicago

This is the tenth and last of a series of charts showing the trend in locations of physicians from April 1946 to January 1947.

After all the doctors have returned from the service and have established their practices, many areas still will be lacking in medical personnel, chiefly because these communities are financially unable to support a doctor or have inadequate hospital facilities. One of the ten points of the American Medical Association's program for extending to all people in all communities the best possible medical care recognizes federal aid to states where definite need is demonstrated to be administered by the proper local agencies of the states involved, with the help and advice of the medical profession. With this in mind, the Hill-Burton hospital survey and construction program was favored by the Association especially for its effect on rural practice. It is most important that these hospitals and health centers maintain at all times high medical standards. In order to attract physicians into areas where they are needed, physicians must have reasonable assurance of economic security, satisfactory medical facilities and an opportunity to practice medicine at its best.



Population, based on 1943 estimated Census figures, per physician (excludes retired and not in practice) by state.

Key: Physician-population ratio by state: plain area 1-999, dotted area 1,000-1,499, striped area 1,500-2,999, checked area 3,000 and over.

The Hospital Survey and Construction Program

Last summer Congress passed the Hospital Survey and Construction Act. This legislation has two broad purposes: first, to help the states find out what their hospital facilities are and, second, to help build new hospitals or additions where they are needed most. To accomplish this twofold aim, the act authorizes $3,000,000 in federal funds to assist with the survey and planning and $75,000,000 a year for the next five years to assist with construction.

Probably the most forward looking feature of this legislation is its requirement that the states survey their existing facilities and plan construction where the need is greatest. Obviously, the most urgent need is in our rural sections, and for this reason priority is being given to those areas. However, there are limitations to this program which will affect rural communities the most. The first is the requirement that, for every dollar of federal funds spent on hospital construction, the community itself must put up two dollars. The second is the matter of maintenance and operation; no federal funds are provided for this purpose. Hospitals are complex institutions, expensive to build and maintain, and, if rural communities are to realize the benefits of this legislation, many of them will need additional help.

Five states have already recognized this situation and have passed laws authorizing state funds to aid local communities in hospital construction. Two states have gone a step further by appropriating money to help with the maintenance once the hospitals are built. Other states are considering similar legislation.

In the year since the passage of the hospital act great progress has been made. All states and territories have started, and some have completed, their surveys. By June 30 three states had submitted their state plans, and reports indicated that nearly all the states would have theirs ready by the end of this year. So that construction can start immediately, Congress authorized an arrangement which makes $75,000,000 available for hospital building during the year ending June 30, 1948. These funds may be used not only for hospitals but for health centers, laboratories, clinics and other medical facilities.

VANE M. HOGE, M.D., Medical Director;
Chief, Division of Hospital Facilities,
U. S. Public Health Service.

Medical Service Program

To develop the Ten Point Program of the American Medical Association the Council on Medical Service believes that any program for the medical care of the American people must be built from the bottom up—and not be imposed from the top down. Hence the importance of this state by state study is obvious. Of major importance in this program was the nationwide development of voluntary prepayment medical care plans. This voluntary program has now spread to thirty-six states and the District of Columbia. All but one of the remaining states are seriously working on a prepayment program. Enrolment in these plans is steadily growing, and special attention is now being directed toward the rural areas.

Thirty-seven of sixty-one medical society plans have started a rural enrolment program. Twenty-one of these plans have enrolled 385,922 persons from these areas. Enrolment figures are steadily increasing, as also is the number of plans undertaking enrolment in rural areas.

Assistance is extended to farm groups and to others in rural areas not associated with groups for enrolment on a community basis. Local health councils with representation from professional societies and from civic, farm and industrial groups are preparing to spearhead the further development of voluntary prepayment medical care plans.

The Council on Medical Service has just completed a special brochure on "Medical Care Prepayment Plan Development Through a Local Health Council," which will be ready for distribution soon. This outlines a plan for organization, lists the functions for a local health council and suggests ways to obtain enrolment in rural areas. This local activity with medical society guidance is progressively building toward better medical care for all people.

To get action from the profession on the Ten Point Program, regional conferences have been held by the Council throughout the country and many state and county medical societies have inaugurated programs of their own or have taken the Ten Point Program and adapted it to their own local needs. To date these conferences have consisted largely of discussion by key physicians. A new development in this will mark the regional conference of the Southeastern states to be held in Atlanta, Ga., in October to consider "Health Problems of the South." Leaders in farm, educational and industrial life of the South, as well as physicians, will be on the program.

The problem of medical service is not static. It is complex. It demands cooperation. As soon as progress is made in one segment of the problem, other problems will arise, for medical progress brings medical problems.

Under the leadership of American medicine much is being done to solve these problems. Rural health conferences are being held, health councils formed, studies being made in child health, in old age. From all angles surveys are projected. American medicine is attacking these problems—no matter how difficult—wholeheartedly, efficiently, tirelessly and often successfully.

THOMAS A. HENDRICKS, Secretary,
Council on Medical Service,
American Medical Association.

Washington Letter

(From a Special Correspondent)

Sept. 3, 1947.

Committee to Coordinate Government Research

A report by Presidential Assistant John R. Steelman as chairman of the President's Scientific Research Board advocated an expenditure of two billion dollars a year on scientific research by 1957. Commenting on it, President Truman announced that he would shortly name a federal committee to aid coordination of government research programs. The report advocated formation of a National Science Foundation, although Mr. Truman had vetoed the bill passed by Congress last session creating such a foundation on the ground that it centered too much authority in a part time committee of scientists. Mr. Steelman's report also urged heavier emphasis on basic research and medical research and recommended that military research be continued at a high level for the next five years. Other proposals: a federal program of assistance to undergraduate and graduate students in science as part of an overall national scholarship and fellowship program to deal with scientific manpower shortages; federal assistance to universities and colleges in laboratory facilities and scientific assistance; assistance to European laboratories as part of a program of peaceful aid. The report stated that the Soviet Union's 1947 budget provides $1,200,000,000 for research and development, and Russia has adopted a five year program to produce 140,000 engineers and scientists each year. The report blamed England's lag in technological developments for upsetting the balance of power in Europe, causing two world wars. Discontinuance of a flow of scientific information from other countries, because "Europe's laboratories are still blacked out," was described by Mr. Truman as "an emergency and a challenge."

Ask Investigation of Veterans Administration Program

Louis E. Starr, Veterans of Foreign Wars commander, urged an immediate joint study by a congressional committee and a group of war veterans of the Veterans Administration hospital building program, which he said was "hopelessly adrift." He urged that the study be ready for consideration by Congress when the next session opens in January. He charged that the VA hospital waiting list contains 19,000 names and claimed that the program to establish 150,000 hospital beds by 1948 is two years behind schedule.

President Requests Job Assistance for the Physically Handicapped

Federal, state and local officials have been asked by President Truman to cooperate in a program aimed at finding jobs for physically handicapped persons. The request was made during signing of the proclamation designating October 5 to 11 as "National Employ the Physically Handicapped Week."

Coming Medical Meetings

American Academy of Neurological Surgery, Colorado Springs, Broadmoor Hotel, Oct. 9-11. Dr. T. C. Erickson, 1300 University Ave., Madison 5, Wis., Secretary.

American Academy of Ophthalmology and Otolaryngology, Chicago, Palmer House, Oct. 12-17. Dr. W. L. Benedict, 102 Second Ave. S.W., Rochester, Minn., Secretary.

American Anti-Arthritis Association, Del Mar, Calif., Oct. 4-5. Dr. Robert T. Pottenger, 65 N. Madison Ave., Pasadena, Calif., Secretary.

American Association of Medical Record Librarians, New York, Hotel Commodore, Sept. 7-12. Mrs. Adaline Hayden, 18 E. Division St., Chicago, Executive Secretary.

American Clinical and Climatological Association, Colorado Springs, Oct. 13-15. Dr. James Bordley III, Johns Hopkins Hospital, Baltimore 5, Secretary.

American College of Surgeons, New York, Waldorf-Astoria Hotel, Sept. 8-12. Dr. Paul B. Magnuson, 40 E. Erie St., Chicago 11, Secretary.

American Congress on Obstetrics and Gynecology, St. Louis, Municipal Auditorium, Sept. 8-12. Mr. Karl S. Richardson, 24 West Ohio St., Chicago, Business Manager.

American Hospital Association, St. Louis, Sept. 22-25. Mr. George P. Bugbee, 18 E. Division St., Chicago, Exec. Secretary.

American Public Health Association, Atlantic City, Oct. 6-10. Dr. Reginald M. Atwater, 1790 Broadway, New York 19, Executive Secretary.

American Roentgen Ray Society, Atlantic City, Sept. 16-19. Dr. H. Dabney Kerr, University Hospitals, Iowa City, Secretary.

Central Neuropsychiatric Association, Galveston, Texas, Oct. 17-18. Dr. William C. Menninger, 3617 W. Sixth Ave., Topeka, Kans., Secretary.

Colorado State Medical Society, Denver, Shirley-Savoy Hotel, Sept. 17-20. Mr. Harvey T. Sethman, 1612 Tremont Place, Denver 2, Executive Secretary.

Connecticut Clinical Congress, New Haven, Sept. 16-18. Dr. Francis G. Blake, 258 Church St., New Haven, Chairman.

Delaware, Medical Society of [illegible] Dr. John F. Hynes, Memorial Hospital, [illegible]

District of Columbia, Medical [illegible] Oct. 6-8. Mr. Theodore Wiprud, 1718 M [illegible], Secretary.

International College of Surgeo [illegible] Palmer House, Sept. 29-Oct. 2. Dr. Louis J. Gariepy, 16401 Grand River Ave., Detroit 27, Secretary.

Inter-State Postgraduate Medical Association of North America, St. Louis, Public Auditorium, Oct. 14-17. Dr. Tom B. Throckmorton, 406 Sixth Ave., Des Moines, Iowa, Secretary.

Kentucky State Medical Association, Louisville, Sept. 29-Oct. 2. Dr. P. E. Blackerby, 620 S. Third St., Louisville 2, Secretary.

Michigan State Medical Society, Grand Rapids, Pantlind Hotel, Sept. 23-26. Dr. L. Fernald Foster, 2020 Olds Tower, Lansing 8, Secretary.

Mississippi Valley Conference on Tuberculosis, Chicago, Edgewater Beach Hotel, Sept. 8-10. Mr. Donald E. Pratt, 411 W. Tenth St., St. Louis 1, Secretary.

Mississippi Valley Medical Society, Burlington, Iowa, Oct. 1-3. Dr. Harold Swanberg, 510 Maine St., Quincy, Ill., Secretary.

Pennsylvania, Medical Society of the State of, Pittsburgh, Hotel William Penn, Sept. 15-18. Dr. Walter F. Donaldson, 500 Penn Avenue, Pittsburgh 22, Secretary.

Southern Psychiatric Association, Birmingham, Ala., Oct. 13-14. Dr. Newdigate M. Owensby, 384 Peachtree St. N.E., Atlanta, Ga., Secretary.

Utah State Medical Association, Salt Lake City, Sept. 11-13. Dr. Ray T. Woolsey, 316 Atlas Bldg., Salt Lake City 1, Secretary.

Vermont State Medical Society, Burlington, Hotel Vermont, Oct. 1-3. Dr. Theodore H. Harwood, 128 Merchants Row, Rutland, Secretary.

Virginia, Medical Society of, Roanoke, Oct. 13-15. Miss Agnes V. Edwards, 1200 E. Clay St., Richmond 19, Secretary.

Washington State Medical Association, Seattle, Olympic Hotel, Sept. 28-Oct. 1. Dr. Harold E. Nichols, 327 Cobb Building, Seattle, Secretary.

Wisconsin, State Medical Society of, Milwaukee, Oct. 6-8. Mr. Charles H. Crownhart, 110 E. Main St., Madison 3, Secretary.

World Medical Association, Paris, France, Sept. 17-20. Dr. Charles Hill, B. M. A. House, Tavistock Sq., London, W. C. 1, England, and Dr. P. Cibrie, 60 boulevard de Latour-Maubourg, Paris 7e, France, Joint Secretaries

GOVERNMENT SERVICES

VETERANS ADMINISTRATION

RESIDENCY TRAINING

The Veterans Administration is making every effort to encourage doctors who complete residency training in one of its hospitals to accept full time probational appointments in its department of medicine and surgery, Dr. Paul R. Hawley, chief medical director, said August 18. On the satisfactory completion of three years' probational work, appointments are made permanent. These doctors will be placed, if possible, in positions where they may practice their specialties and best serve ill and disabled veterans, Dr. Hawley added.

The Veterans Administration offers the guidance of certified specialists to doctors who will serve in Veterans Administration hospitals both during and after completion of residency training. Guidance in the field of psychiatry also is offered in mental hygiene clinics where the chief of clinic has not been certified by the American Board of Neurology and Psychiatry, provided the chief is a capable specialist. In many fields, such as dermatology, ophthalmology and otolaryngology, guidance might also be received by doctors at regional offices The Veterans Administration has training programs under way in 62 of its 124 hospitals, with 1,770 residents studying for their specialty boards. This training program is a vital source for the recruitment of permanent doctors for the department of medicine and surgery and is an important feature of the program to provide eligible veterans with medical care "second to none"

FIFTEEN NEW VETERANS' HOSPITALS

The War Department announces that the army chief of engineers expects to advertise for bids for the construction of fifteen new Veterans Administration general hospitals, some of them within forty-five days, for which the working drawings have been completed. These hospitals will be located at:

Beckley, W. Va.	200 beds each
Clarksburg, W. Va.	
Grand Island, Neb.	
Poplar Bluff, Mo.	
Fort Wayne, Ind.	
Erie, Pa.	
Altoona, Pa.	
Newark, N. J.	1,000 beds
Little Rock, Ark.	500 beds each
Omaha	
Wilkes-Barre, Pa.	475 beds
Shreveport, La.	450 beds
Wilmington, Del.	300 beds
Iron Mountain, Mich.	250 beds each
Big Spring, Texas	

Of the other forty-nine hospitals included in the program undertaken by the army engineers for the Veterans Administration, the preliminary plans are at a stage where their revision can be made with a minimum of loss of time and effort. The engineers plan to slash about $100,000,000 off the present designs in accordance with the statement by General Bradley that present day prices make it necessary to modify the designs or obtain a large amount of additional building funds.

COMPENSATION PAYMENTS TO VETERANS WITH TUBERCULOSIS

The Veterans Administration will extend compensation payments to veterans who have been discharged from VA hospitals with arrested pulmonary tuberculosis but who need more time at home in which to recover sufficiently to take a job without endangering their health. The new plan announced by the Veterans Administration permits payment to such veterans on a totally disabled basis up to two years from date of discharge from any VA hospital while they remain under close medical supervision. Previously these payments were reduced by 50 per cent within six months of the veteran's discharge from the hospital. Now these veterans will be examined every six months and, if examination shows they are unable to resume employment, physicians will certify their findings so that the VA may determine whether to continue full compensation payments for an additional six months. This plan is expected to result in better control of arrested pulmonary tuberculosis among veterans and so reduce the necessity of hospitalizing them again. Many prominent tuberculosis specialists have advocated this action, it is said, and characterize it as one of the most promising advances in the care of tuberculosis by the Veterans Administration.

INCREASED ALLOWANCE TO VETERAN STUDENTS

A law passed by the last session of Congress provides for automatic increases effective September 1 in the minimum allowances received by the more seriously disabled veterans enrolled in educational and training courses under government sponsorship. The law provides that a veteran enrolled in a course under the Vocational Rehabilitation Act (Public Law 16) whose disability is 30 per cent or higher will receive $115 a month if he has no dependents, and $135 if he has one dependent. The old law allowed $105 and $115 respectively for the same two categories, and the lower figures will continue to apply to veterans with disabilities of less than 30 per cent. The new law also increases the allowance for additional dependents of veterans with disabilities of 30 per cent or more, the additional allowance for one child being increased from $10 to $20 a month, and the previous allowance of $7 a month for each additional child being increased to $15.

AIR CONDITIONED HOSPITAL AT FRESNO, CALIF.

The contract for $5,645,700 for the construction of the Veterans Administration Hospital at Fresno, Calif., which has been awarded, is the first contract made under the procedure developed by General Bradley, administrator of veterans affairs, and Lieut. Gen. Wheeler, army chief of engineers, calling for a revision of designs to meet a smaller budget. This 250 bed general hospital will be the only air conditioned one in the program undertaken by the army corps of engineers for the Veterans Administration.

LAUNDRY EQUIPMENT FOR HOSPITALS

The Army Corps of Engineers has awarded a contract for $3,236,067 for laundry equipment for sixty-one Veterans Administration hospitals. The equipment includes washing machines, drying tumblers, press units, extractors, marking machines and all other units that go to make a first class laundry.

PENSIONS FOR VETERANS OF CIVIL AND SPANISH-AMERICAN WARS

The Veterans Administration will pay a 20 per cent increase in non-service connected pensions for veterans of the Civil and Spanish-American wars and in death compensation to their dependents, effective in September. Some 113,000 veterans and 95,000 dependents of deceased veterans will benefit by the new law. It is estimated that the increase will total about $29,000,000 for the first year and that the cost will decline rapidly thereafter. Previously, payments ranged from less than $15 a month to $100 a month.

TESTS TO IMMOBILIZE BACTERIA IN HOSPITALS

The Veterans Administration is conducting an intensive pilot test in a New England hospital with an oil emulsion designed to immobilize bacteria in tuberculosis wards and hospitals. Blankets, linens and floors have been treated with a highly refined oil in order to trap settling bacteria and prevent their recirculation by air currents within the patients' rooms. Methods are also being studied to kill the trapped bacteria by means of chemicals or drugs. As yet the results of adding various compounds to the oil for this purpose have been disappointing. The purpose of the experiments is to reduce further the danger of Veterans Administration employees contracting tuberculosis and transmitting it to others.

THE AURAL REHABILITATION PROGRAM

About 30,000 World War II veterans with service connected hearing impairments will be eligible for the recently established rehabilitation program. Two Veterans Administration and two naval hospitals have been designated as centers where fenestration operations may be performed on veterans who stand a chance of regaining some degree of hearing through treatment. The Veterans Administration hospitals are in Los Angeles and San Francisco, and the naval hospitals are in Bethesda, Md., and Philadelphia.

HOSPITAL NEWS

Bids are being accepted by the Veterans Administration for the construction of a 564 bed neuropsychiatric addition to the hospital at Lebanon, Pa. This hospital now has 212 beds for medical and surgical cases and 265 beds for neuropsychiatric patients.

The Danville, Ill., Y. M. C. A. is cooperating with the Veterans Administration hospital in that city by offering its gymnasium facilities to patients able to take part in athletics.

A patient in the Veterans Administration hospital at Memphis, Tenn., paralyzed from the waist down coached employee basketball teams from a wheel chair, and the men's team won twelve out of the fifteen games.

The Veterans Administration in the Dallas, Texas, area has obtained more than two hundred bicycles from army surplus stocks for patients who have their physician's permission to ride them.

RESIDENCY TRAINING IN TUBERCULOSIS

For the first time the Veterans Administration is offering physicians residency type training in tuberculosis. This training will be available at VA hospitals at Alexandria, La., Excelsior Springs, Mo., Brecksville, Ohio, Oteen, N. C., and McKinney, Texas. Physicians serving in these residencies may earn credit toward the examinations of the American Board of Internal Medicine and its subspecialty board for pulmonary diseases.

PERSONAL

Dr. J. B. Floyd has resigned as director of the tuberculosis prevention work with the Kentucky State Health Service and has accepted a position as chief medical officer for Eastern Kentucky for the Veterans Administration, with headquarters at Lexington.

Dr. Walter B. Brown has been appointed clinical director of the Veterans Administration hospital at San Fernando, Calif. He is a graduate of Rush Medical College, Chicago, a veteran of World War II and formerly was chief of tuberculosis at the Veterans Administration hospital, Livermore, Calif.

Dr. James J. Raleigh has been assigned to the staff of the veterans' hospital at Sunmount, N. Y. Dr. Raleigh formerly was connected with the Berthold S. Pollak Hospital for Chest Diseases, Jersey City, N. J.

PUBLIC HEALTH SERVICE

EUROPEAN ARRIVALS MUST BE VACCINATED

Persons arriving from Europe are now required to present a certificate showing that they have been successfully vaccinated against smallpox within the last three years or show physical evidence that they have had smallpox, the U. S. Public Health Service has announced. Travelers who cannot prove immunity to smallpox must either consent to an immediate vaccination or remain under observation of quarantine officials until the incubation period for the disease is past. This period will not exceed fourteen days after arrival. Increased air travel, which results in travelers reaching the United States before outbreaks of smallpox in foreign countries can be reported to quarantine officials, necessitated the new immunization requirement. As a further protection, arrangements are being made with the transportation industry to refuse to sell tickets to persons who cannot show proof of smallpox immunity.

AWARDS AND COMMENDATIONS

Dr. Thomas Parran Jr.

The United States of America Typhus Commission Medal has been awarded to Dr. Thomas Parran Jr., Surgeon General, U. S. Public Health Service, who, according to the citation, rendered exceptionally meritorious service in connection with the work of the United States of America Typhus Commission during the period July 1942 to June 30, 1946. Through his wisdom, special knowledge, advice and influence, he contributed to the commission's investigations and control of typhus fever in the United States and in theaters of operation overseas. World renowned leader in public health, Dr. Parran has inspired and helped to create a new era in worldwide typhus control. Dr. Parran graduated from Georgetown University School of Medicine, Washington, D. C., in 1915 and entered the military service March 26, 1917.

MISCELLANEOUS

SALE OF SURPLUS GOVERNMENT PROPERTY

The War Assets Administration is conducting sales of surplus government property, in purchasing which physicians who are veterans have certain priorities. Items in a sale at the Army Base, Boston 10, are crutches, stretchers, beds, oxygen purifiers, electric oven or incubator, microscopic lamps and hand splints. The sale closes September 22. The Denver Regional Office, 728 15th Street, Denver 2, of the War Assets Administration is conducting a sale, beginning September 18, of various kinds of sterilizers, including those used for surgical instruments, dressings, utensils, hypodermic needles and water. Physicians who are veterans have certain priorities in these sales. Orders received after September 17 will be filled without regard to priorities. In this continuous fixed price sale, a deposit of at least 10 per cent of the total price offered must accompany all orders; $25 is the smallest deposit acceptable.

PHYSICIANS SEPARATED FROM SERVICE

Massachusetts

Butler, Carrol F.	Worcester
Casserly, George B.	North Andover
Ciani, Angelo W.	Cambridge
Dunn, Paul P.	Fall River
Generales, Cleomenes A.	Lowell
Grimes, Arthur J. Jr.	Gloucester
Harrington, Edward C.	Holyoke
Harvey, Norman A.	Holyoke
Heimberg, Felix	Dorchester
Howard, Fred H.	Chicopee Falls
Hussey, Earle U	Lynn
Kane, Charles A.	Roslindale
Magwood, Robert W.	Somerville
Mahony, Thomas H. Jr.	Boston
Martin, Clarence S.	Arlington Heights
O'Connor, Paul J.	Worcester
Peloquin, Laval U.	Lowell
Regnier, Edme	Salem
Reinisch, Max	Holyoke
Sharpe, Myer	Malden
Snyder, Philip F	Lynn
Sullivan, John F.	Dorchester

Michigan

Asselin, David C.	Detroit
Bishop, Ronald C.	Almont
Burch, John E.	Wyandotte
Charleston, Roderick A.	Detroit
Deland, Clyde L.	Battle Creek
Drazek, Joseph A.	Detroit
Elovzin, Manning	Detroit
Henderson, Allison B.	Detroit
Henderson, William W.	Highland Park
Hinshaw, Warren V.	Onsted
Jones, Herbert A. Jr.	Wyandotte
Kelson, Malcoln J. Jr.	Detroit
Levin, Herbert G.	Detroit
Maxim, Edward S.	Detroit
Morton, David G.	Detroit
Rentenbach, Robert F.	Detroit
Scher, Joseph N.	Mt. Clemens
Schweigert, Clarence F.	Detroit
Seiferlein, Archibald L.	Detroit
Shelden, Warren E.	Detroit
Youngman, Douglas C.	Highland Park

Minnesota

Adams, Neil D.	Rochester
derson, Arnold S. Jr.	Minneapolis
ernstein, William G.	Stillwater
Brotchner, Leonard A.	St. Paul
Burns, Craig A.	Minneapolis
Emerson, Edwin E.	Proctor
Fee, John G.	Duluth
Gleason, Donald F.	Litchfield
Hartman, Seymour A.	Minneapolis
Karleen, Conrad I.	Tracy
Landa, Marshall	Minneapolis
Leverenz, Carleton W.	St. Paul
Nelson, Paul R. Jr.	Virginia
O'Phelan, Harvey E.	St. Paul
Perry, John W.	St. Paul
Petit, Julien V.	Minneapolis
Preston, Lewis F.	Rochester
Rogin, Norton	Minneapolis
Rushton, Joseph G.	Rochester
Russell, Paul L.	Minneapolis
Schrier, Harold L.	St. Cloud
Shapiro, Marvin J.	Minneapolis
Wallin, Ira O.	Two Harbors
Ward, Byron H.	Rochester
Wylie, Robert L.	St. Paul
Yaeger, John J.	Sanborn
Zarling, Virgil R.	Minneapolis

Mississippi

Hightower, Jesse R.	Itta Bena
Rogers, Joseph B.	New Albany

Missouri

Dreyer, William F.	Webster Groves
Graham, David T.	St. Louis
Levin, Abraham J.	St. Louis
McDowell, Allyn J.	St. Louis
Pierron, John B.	Kansas City

Missouri—Continued

Scott, John E.	Kansas City
Silvermintz, Saul D.	Clayton
Veninga, Frederick W.	St. Louis
Weinel, Francis G.	Webster Groves
Westcott, Robert J.	Knox City
Westsmith, Richard A.	St. Louis
Wise, Wilfred	St. Louis
Wooldridge, Alexander G.	Butler

Nebraska

Bosley, Warren G.	Palisade
Campbell, Stuart D.	Omaha
Fleming, Edward F.	St. Paul
Hopkins, William J.	Omaha
Johnson, Cedric C.	Omaha
Luikart, Ralph H. Jr.	Omaha
O'Neil, James J.	Omaha
Petersen, Donald M.	Hampton
Stemper, Jack M.	Lincoln
Wiedman, John G.	Lincoln

New Hampshire

Page, Otto C. Jr.	Laconia

New Jersey

Berman, Carroll Z.	Passaic
Bologna, Camillo V.	Garfield
Camarda, Joseph J.	Plainfield
Carter, Ogden B. Jr.	West Orange
Crowley, Lawrence G.	East Orange
Davis, John F.	Bloomfield
DeLong, Edward E.	Lyons
Feeney, Edward J.	Newark
Fenichel, Murray F.	Newark
Foster, John T.	So. Orange
Freda, Franklin D.	Newark
Froelich, Jerome J.	Newark
Fuhrmann, John B.	Flemington
Gamon, Adam E. II	Montclair
Hawkins, Robert C. II	Glassboro
Hillman, Frederick C.	Paterson
Lilien, Bernard B.	Irvington
Mischle, Ellis J.	Jersey City
Morrill, James P.	Glen Rock
Mullowney, James P.	Marlton
Murray, Francis J.	Elizabeth
Osterberg, Eric R.	East Orange
Pietri, Jose F.	West End
Prall, Robert C.	Montclair
Ramundo, Michael R.	Clifton
Schwartz, Henry C.	Atco
Schwartz, Ralph A.	Newark
Shanik, Morton J.	Dover
Silk, Morton J.	Bayonne
Storer, Alexander Jr.	Pitman
Van Ness, Walter J.	Hawthorne
Warwick, Ralph A.	Camden
Wassell, Benjamin	East Orange
Waugh, Bascom S.	Camden
Woolbert, Edwin S.	Pleasantville
Wunderlich, Howard O.	Union City
Zavertnik, Joseph J.	Englewood
Zheutlin, Bertram	Jersey City

New Mexico

Syme, Oscar	Albuquerque

New York

Benzier, Erwin E.	Flushing
Bisordi, Mario V.	Mount Vernon
Blakeslee, Robert N.	Windham
Bolin, Neatha V.	Bath
Bornstein, Siegbert	Brooklyn
Boylan, John W.	Rochester
Brauer, Werner	New York
Breckler, Irving A.	New Rochelle
Brown, Merton L.	New York
Caccamise, Charles W. Jr.	Rochester
Cacioppo, Leonard R.	Brooklyn
Carton, Charles A.	New York
Casey, Charles C.	Medina
Chamberlain, John M.	Cooperstown
Cobert, Amos	New York
Cohen, Sidney M.	Brooklyn

New York—Continued

Colby, Raymond G.	Bronx
Cucolo, Gabriel F.	Brooklyn
De Feo, Edward	Schenectady
Delbel, Nello V.	Plattsburg
De Marco, Michael	New York
Dixon, George G.	Brooklyn
Donnelly, William L.	Brooklyn
Doyle, Henry W. Jr.	New York
Driscoll, Joseph C.	Schenectady
Du Bow, Emanuel	New York
Dugan, David D.	Hamburg
Dutchen, William	New York
Dwinelle, William H.	Tully
Eckart, Robt. E.	Great Neck
Essenson, Lawrence	New York
Feldman, John L.	New York
Fletcher, Gilbert H.	New York
Forrest, Fred M.	St. Albans
Fox, John L.	Brooklyn
Fox, Max	Brooklyn
Gee, Willis W.	Newburgh
Gonet, Jean E.	Rhinebeck
Gordon, Hirsch L.	Bronx
Grover, Donald S.	Syracuse
Haber, Sidney A.	Brooklyn
Hart, George G.	Lake Placid
Hassenfratz, Arthur C.	Buffalo
Hastings, Wade A.	Brushton
Heller, Morris F.	New York
Hempel, Herbert F.	Yonkers
Hermann, Henry L.	New York
Hoffman, Burton P.	Brooklyn
Johnson, Thomas H.	Yonkers
Kagan, Harold N.	Port Jervis
Larson, Albert L.	White Plains
Lass, Paul M.	New York
Latella, Peter	Tuckahoe
Lawson, John W.	Yonkers
Levinson, Robert D.	Brooklyn
Levitin, Milton	Brooklyn
Levy, Edwin M.	Canandaigua
Liebling, Walter	Bronx
Luhr, Alfred F.	Buffalo
Michaels, Abraham J.	Brooklyn
Miller, George E. Jr.	Bath
Miner, Irving E.	Baldwin
Mitchell, Alexander C.	New York
Morris, Allston J. Jr.	New York
Mosco, James A.	Buffalo
Mueller, George C.	New York
Mueller, Helmut A.	North Tonawanda
Mullins, Bernard L.	New York
Musicant, Belmont S.	New York
Musicant, William W.	Brooklyn
Myers, David	Bronx
Nevin, George F.	Newark
Nixdorf, Wallace B.	Syracuse
Pernice, Salvatore J.	New York
Phillips, Arthur M.	New York
Pisk, Ernest	New York
Prowda, Tilden M.	Syracuse
Putman, George W.	Albany
Renzetti, Attilio D. Jr.	New York
Ricotta, Joseph J.	Buffalo
Robbins, Milton	New York
Robertazzi, Raphael W.	Brooklyn
Sachs, Julius J.	Brooklyn
Salik, Julian O.	Bronx
Sands, George W.	New York
Scheinberg, Israel H.	Great Neck
Schenkman, Harry	Brooklyn
Schneck, Herman	New York
Schubmehl, Quinton D.	Painted Post
Schumann, David P	Brooklyn
Schwartz, Abraham	New York
Schwartz, Stanley E.	Atlantic Beach
Searles, Harold F.	Hancock
Shaw, Ned	Brooklyn
Shea, James J.	Brooklyn
Shearer, John K.	Schenectady
Sivak, George C.	Brooklyn
Skoluda, Eric R.	New York
Smith, Carl A.	Brooklyn
Stoddard, Raymond H.	Millport

PHYSICIANS SEPARATED FROM SERVICE

New York—Continued

Taylor, Gordon B.	Utica
Tirman, Robert M.	Brooklyn
Van Landingham, John H.	New York
Van Marter, James H.	Groton
Van Vlack, Hall G.	Jamestown
Wade, Preston A.	New York
Waitzel, Isidor D.	Brooklyn
Watsky, Sheldon R.	Mt. Vernon
Weinstein, Jack	Brooklyn
Zahn, Daniel W.	Brooklyn

North Carolina

Beckwith, Robert P. Jr.	Roanoke Rapids
Dalton, Arthur M.	Durham
Dickson, Brice T. Jr.	Gastonia
Duffy, Richard N.	New Bern
Heffner, Bain L.	Greensboro
King, Herbert A.	Durham
Kirksey, William A.	Fayetteville
Landolt, Allison B.	White Plains
Vandegrift, Harvey N.	Durham

Ohio

Anderson, Robert A.	Dayton
Beck, J. Montgomery	St. Clairsville
Bell, Wendell M.	Mansfield
Blank, Sanford	Cleveland
Borden, Robert A.	Crestline
Burkey, John N.	Cincinnati
Buvinger, Wilson J. Jr.	Cincinnati
Caldwell, Harry E.	Delaware
Dever, Francis X.	Cleveland
Duncan, Wallace S.	Cleveland Heights
Durschlag, Sidney W.	East Cleveland
Forthman, William H.	Cincinnati
Fries, William H.	Dayton
Goldman, Harry	Cleveland
Helm, Albert J.	London
Hopwood, Howard H.	Shaker Heights
Hudson, Harry C.	Cincinnati
Hughes, Henry G.	Columbus
Johnson, Richard L.	Lima
Kaplan, Ronald R.	Cleveland Hts.
Katz, Aaron A.	Cincinnati
Kiebler, George M.	Niles
Lenahan, John P.	Cleveland
Lenhart, Francis M.	Defiance
Lyons, Joseph J.	Cleveland
McClelland, Elmer E.	Shadyside
MacDermott, James C. Jr.	Wellington
Morris, Lester C.	Cleveland
Muter, Clyde W.	Warren
Palmer, Richard A.	Toledo
Rittmeyer, Jack L.	Cincinnati
Schechter, Marshall D.	Cincinnati
Schneble, Richard J.	Dayton
Sternfeld, Ernst	Toledo
Vanordstrand, Howard S.	Cleveland Hts.
Webster, Charles A. Jr.	Dayton

Oklahoma

Brown, Clifford A.	Oklahoma City
Diveley, Walter L.	Gerber
Fisher, Roy L.	Frederick
Huff, Dick H. P.	Norman
Kern, Clyde V.	Tulsa
Meis, Armon M.	Oklahoma City
Morgan, Vance F.	Oklahoma City
Moseley, Harrel D.	Oklahoma City
Parrish, Stuart L.	Walters
Russell, Homer B.	Oklahoma City
Saylor, Robert M.	Seiling

Oregon

Amato, Joseph P.	*Portland*
Anderson, Clifford	Portland
Dierickx, Francis J.	Forest Grove
Emig, Otto R.	Portland
Erickson, Raymond L.	Beaverton
Gaeden, Norman J.	Portland
Greenwood, Ernest P.	Portland
Guiss, Russell L.	Woodburn
Haworth, James B.	Portland
Moe, Warren Y.	Portland

Pennsylvania

Baron, Raymond C.	Philadelphia
Beckel, Frank L.	Huntingdon
Bixby, Edward W. Jr.	Wilkes Barre
Blasco, Walter J.	Kingston
Boyle, William F.	Philadelphia
Byrne, Joseph T.	Carbondale
Campbell, Joseph L.	Ulster
Capeliari, Elmer E.	Pittsburgh
Cavender, John C.	Philadelphia
Clare, David W.	Apollo
Cleveland, Frank P.	Pittsburgh
Clyman, Byron	Philadelphia
Culleton, James F.	Sewickley
Davies, William Jr.	*Pittsburgh*
Dawson, Reese E.	Pittsburgh
Dedinsky, John J.	Smock
De La Vara, Fernando F.	Allentown
Dickensheets, James G.	Philadelphia
Dickenson, James R.	Pittsburgh
Doherty, John H.	Scranton
Douglas, Edgar J.	Oakmont
Dreer, Aaron M.	Philadelphia
Dreier, Joseph F.	Dushore
Duffy, Fred C.	Pittsburgh
Dumeyer, William H.	Johnstown
Dunlap, Stephen E.	Lancaster
Harrer, William J. Jr.	Sharon
Harter, Leo	Pittsburgh
Hartman, Owen W.	Philadelphia
Heath, Erle M.	Pittsburgh
Heinbach, Robert A.	St. Clair
Helms, David O.	Bethlehem
Konhaus, Carol H.	Mechanicsburg
Lacy, George R. Jr.	Mt. Lebanon
Lazzeri, John J.	Rural Valley
Lenker, Luther A.	Harrisburg
Levin, Emanuel J.	Philadelphia
Lewis, Howard T. Jr.	Pittsburgh
Lewis, Scott B.	West Chester
Liebman, Sydney	Pittsburgh
Limbert, Lawrence	Conshohocken
McAdams, Hugh J.	Philadelphia
Mackler, Bruce	Philadelphia
Markley, Henry E.	Sunbury
Missett, James S.	Drexel Hill
Monheit, Richard S.	Melrose Park
Morgan, William A.	Philadelphia
Myers, David	Philadelphia
Nickles, William A. III	Shippensburg
O'Connell, Charles L. Jr.	Crafton
Papola, Gino G.	Philadelphia
Paschold, John H.	Perrysville
Purvis, William E.	Franklin
Rau, Raymond L.	Homestead Park
Ross, Gordon L.	Lewisburg
Rowse, Richard F.	Pittsburgh
Rudolph, Herman L.	Reading
Sagone, Arthur L.	Pittsburgh
Schadt, Oliver S. Jr.	Allentown
Schlotter, Donald C.	Bethlehem
Shafer, Edward A.	Kingston
Sidwell, Harvey P.	Delta
Silvers, Arthur H.	Elkins Park
Valentine, Jerome D.	Philadelphia
Ward, Hugh J.	Hazelton
Warden, David E.	Pittsburgh
Watson, Roger E.	Haverford
Weaber, Thomas H. Jr.	Allentown
Weaver, Frank M.	York
Webber, Arthur C.	Coopersburg
Witt, Daniel E.	Williamsport

Rhode Island

Pahigian, Vahey M.	Providence
Vaznaian Vian, George M.	Woonsocket

South Carolina

Brooks, Walter E.	Charleston
Burge, Julius C. Jr.	York
Deyerle, Henry P.	Charleston
Moore, McKenzie P. Jr.	Charleston
Morrall, John F. Jr.	Beaufort
Murdoch, John H.	Charleston
Parish, Herman S. Jr.	Manning

South Carolina—Continued

Poliakoff, Samuel R.	Abbeville
Schneider, Leopold A.	Ninety-Six
Shecut, James C.	Orangeburg
Tuten, Harry L.	Charleston
Ward, Aaron C.	Calhoun Falls
Young, John M. Jr.	Charleston

South Dakota

Volin, Verlynne V.	Lenox
Wayne, David M.	Redfield

Tennessee

Dunlap, Arthur C.	Paris
Levin, Jack	*Memphis*
Levy, Bertram L.	Mountain Home
O'Connor, Kenneth A.	Oak Ridge
Vlasis, Gus J.	Chattanooga
Williams, Thomas H. Jr.	Chattanooga
Yeargan, Reagan L. Jr.	Harriman

Texas

Britton, Bloyce H.	El Paso
Ellis, John W.	Sherman
Levy, Moise D. Jr.	Houston
Powell, Homer	Dallas
Rosengarten, Leonard M.	Marshall
Thompson, Jesse E.	San Benito
Watkins, Mina D.	Lubbock
Watson, Price T.	Houston
Weinert, Herman Jr.	Galveston
Wynne, Harrison K.	Fort Worth

Utah

Curtis, Homer C.	Salt Lake City
Dorius, John B.	Sandy
Haight, Witney J.	Salt Lake City
Rich, Homer R.	Brigham
Tanner, Richard S.	Salt Lake City

Vermont

Cosgrove, Kevin M.	St. Johnsbury
Dugan, Kermit S.	North Troy

Virginia

Grover, Harle B.	Arlington
Levinson, Joseph E.	Alexandria
Morrissette, William P.	Midlothian
Siegel, Bernard R.	Newport News
Yurko, Leonard E.	Hollidays Cove

Washington

Ehrhart, John D. Jr.	Aberdeen
Mundal, Allen L.	Ephrata
Partlow, Kenneth L. Jr.	Olympia

West Virginia

Linkous, Otis E. Jr.	Welch
Montague, Benjamin F. Jr.	Charleston
Oliver, John G.	Petersburg
Randolph, Brady F. Jr.	Sutton
Weaver, Jerome A.	Parkersburg

Wisconsin

Crone, Richard D.	Beloit
Doctor, Charles W.	Racine
Dodge, Robert K.	Stanley
Dwyer, Reinhardt D.	Madison
Halfen, David P.	Sullivan
Hardin, Creighton A.	Madison
Hogan, Larry H.	Milwaukee
Keane, Keith M.	Madison
Knoedler, William H. Jr.	Milwaukee
Saichek, Herbert B.	Milwaukee
Theisen, James K.	Fond du Lac

Wyoming

Barrett, Francis A. Jr.	Lusk
Durham, Harry B. Jr.	Casper

Canada

Carsen, Albert J.	London, Ontario

Puerto Rico

Colon-Bonet, Juan	Rincon

Medical News

(Physicians will confer a favor by sending for this department items of news of general interest: such as relate to society activities, new hospitals, education and public health. Programs should be received at least two weeks before the date of meeting.)

ALABAMA

Postgraduate Seminar.—The Medical College of Alabama, Birmingham, and the committee on postgraduate study of the Medical Association of the State of Alabama are setting up a three day postgraduate seminar September 24-26 in the auditorium of the Nurses Home, City Hospital, Mobile. Among the subjects to be discussed, largely by men from the state, are recent advances in hematology, tumors, management of peptic ulcer, common surgical problems, urethane in the treatment of leukemia, the Wassermann test in private practice, cardiac emergencies, controversial points in the treatment of coronary occlusion and the nutritional anemias. All doctors are invited. There will be no registration fee.

ARKANSAS

Drs. Meschan and Reilly to Head Departments.—Full time heads of the departments of pediatrics and radiology, University of Arkansas School of Medicine, Little Rock, have been announced. Dr. Isadore Meschan, former instructor of radiology, Western Reserve University School of Medicine, Cleveland, became head of the department of radiology July 15. He is a graduate of Western Reserve University School of Medicine, 1939, and served in World War II. Dr. William A. Reilly, associate professor of pediatrics at the University of California Medical School, Berkeley-San Francisco, will head the department of pediatrics beginning September 1. A graduate of the University of California Medical School, Berkeley-San Francisco, 1927, he has served on the staffs of the University of California, San Francisco, Franklin and St. Mary's hospitals. From 1942 to 1946 he served in the medical corps, Army of the United States, in Africa, Italy and France.

CONNECTICUT

Clinical Congress.—The Connecticut State Medical Society and the Yale University School of Medicine, New Haven, will hold their twenty-second clinical congress September 16-18. The morning presentations will be given in the auditorium of the Yale University School of Law, and the afternoon panels and symposiums in the amphitheaters of the New Haven Hospital and the School of Medicine. Out of state speakers addressing the congress include:

Dr. Lester Dragstedt, Chicago, Vagotomy in the Treatment of Peptic Ulcer.
Ralph M. Kaufman, New York, Psychiatry in a General Hospital.
Dr. Frank W. Reynolds, Baltimore, Results of the Cooperative Clinic Study of the Treatment of Syphilis with Penicillin.
Dr. Raymond D. Adams, Boston, Treatment of Neurosyphilis.
Dr. Samuel M. Peck, New York, Epidemic Ringworm of the Scalp.
Dr. Howard Ulfelder, Boston, Use of the Vaginal Smear in the Diagnosis of Cancer.
Dr. Orvar Swenson, Boston, Congenital Anomalies Causing Obstruction in Gastrointestinal Tract.
Dr. James H. Means, Boston, Treatment of Thyrotoxicosis.
Dr. Wesley W. Spink, Minneapolis, Brucellosis.
Dr. Isadore Snapper, New York, Boeck's Sarcoid.
Dr. Franklin M. Hanger, New York, Liver Function Tests.
Dr. William Dameshek, Boston, Rationality in the Treatment of Anemia.
Dr. John M. Murray, Boston, Psychotherapy in General Practice and in Psychiatric Practice.

Tuesday's program includes panel discussions on Surgical Treatment of Peptic Ulcer, Treatment of Syphilis, Diarrhea in Infancy, and Psychiatry in the General Hospital and a symposium on Occupational Disease. Wednesday afternoon there will be panels on Diagnosis of Uterine Cancer, "Rooming In for Mothers and Infants," and symposiums on Treatment of Congenital Cardiovascular Anomalies and Thyrotoxicosis. Besides symposiums on Psychotherapy and Pulmonary Granulomas Thursday there will be panel discussions on Infectious Diseases, Liver Disease and Anemia.

IDAHO

Outbreak of Poliomyelitis.—Medical resources of Idaho have been mobilized to fight an outbreak of poliomyelitis which officials say has reached "epidemic proportions" in southwestern Idaho. By the middle of August 60 persons had been stricken this year as compared to 11 in the same period of 1946. The National Foundation for Infantile Paralysis Epidemic Aid Unit Team from Northwestern University Medical School, Chicago, comprising two doctors and three physical therapists, has been assisting.

ILLINOIS

State Hospital Plan Approved.—The state department of health has received notice that the Illinois hospital construction plan was approved by the surgeon general of the U. S. Public Health Service August 8. About $2,770,000 of federal funds is thus released for aiding the construction of local nonprofit hospitals in Illinois during the twelve months that began July 1. A similar amount will be available from the federal government for the same purposes during each of the next four succeeding years. The state has also appropriated $4,850,000 to aid in projects in line with the state plan. Based on the results of a hospital survey completed in 1946, the plan lists the areas according to the magnitude of the need for additional hospital facilities. Areas with no hospitals will have priority. Both federal and state funds will be administered by the state department of public health. A division of hospital construction and services has been organized under the direction of Dr. Henrietta M. Herbolsheimer, Chicago, for this purpose.

Chicago

Society Chooses Site for New Home.—Officials of the Chicago Medical Society and representatives of the Medical Center Commission signed an agreement August 20 for the purchase of 2½ acres of land between Damen and Ogden avenues facing on Congress street as the site for the new $2,000,000 home of the Chicago Medical Society, which it hopes to start building in 1950. In the five story building will be a lecture hall with a seating capacity of a thousand and special quarters for nineteen medical groups, a library, a museum of exhibits and office space.

Institute of Medicine Lecture Series.—The Institute of Medicine will present seven lectures by its fellows in its 1947-1948 series of "Where We Stand Today in Medicine." The meetings will be held on the second and fourth Friday afternoons of each month beginning September 12 from 4:45 to 5:30 in the assembly room of the institute. They will be open without fee to all physicians and allied professional groups. The program is as follows:

September 12, Roy R. Grinker, director, Institute for Psychosomatic and Psychiatric Research and Training, Michael Reese Hospital, Every Doctor a Psychiatrist.
September 26, Robert G. Bloch, professor of medicine, University of Chicago School of Medicine, Tuberculous Calcification: Clinical and Experimental Studies.
October 10, Herman L. Kretschmer, clinical professor of urology, University of Illinois College of Medicine, Present Status of the Prostatic Problem.
October 24, Stanley Gibson, professor of pediatrics, Northwestern University Medical School, Indications for Surgery in Congenital Cardiovascular Anomalies.
November 14, Paul W. Greeley, clinical associate professor of surgery, University of Illinois College of Medicine, Scope and Possibilities of Modern Plastic Surgery.
November 28, John R. Lindsay, professor of surgery, University of Chicago School of Medicine, Ménière's Disease: Diagnosis and Treatment.
December 12, Ralph E. Dolkart, associate in medicine, Northwestern University Medical School, Clinical Problems in the Use of Antibiotic Therapy.

LOUISIANA

Dr. Colomb to Head Department of Psychiatry.—Dr. Henry O. Colomb, New Orleans, has been appointed professor of psychiatry at Louisiana State University School of Medicine, New Orleans, and chief of the department of psychiatry. He will develop a program of undergraduate and graduate teaching at the medical school. He graduated at Tulane University of Louisiana School of Medicine in New Orleans in 1923, and was clinical director of the Connecticut State Hospital, Middletown, for a number of years and assistant superintendent at the Philadelphia General Hospital before setting up his private practice in New Orleans in 1942.

MICHIGAN

Dr. Ruedemann Appointed Head of Department.—Dr. Albert D. Ruedemann, Cleveland, for five years head of the department of ophthalmology, Cleveland Clinic Foundation Hospital, became head of the department of ophthalmology at Wayne University College of Medicine, Detroit, June 15. A graduate of the University of Michigan Medical School, Ann Arbor, 1921, he went to the Cleveland Clinic Foundation Hospital in 1924. Dr. Ruedemann received a gold medal from the American Medical Association for his exhibit of a permanent plastic eye at the San Francisco session of the Association in July 1946.

Expand Isabella County Health Program.—Isabella County, the city of Mount Pleasant and the Central Michigan College of Education are participating in the development of a program that will provide basic public services to all groups in the county. Emphasis will be placed on maternal and child health. The state and the federal government are supporting the program, and a large part of the financial support comes from funds allotted to Michigan by the Children's Bureau. Besides the director, Dr. Robert Hall, and his assistant there will be five public health nurses, a health educator, a sanitarian and two clerks on the staff. Attractive quarters have been made available in the Community Hospital, and Dr. Hall has been occupied with setting up committees that will play a large part in the development of the program.

MISSOURI

Kansas City Clinical Conference.—The twenty-fifth annual fall clinical conference of the Kansas City Southwest Clinical Society will be held in Kansas City October 6-9. The out of state speakers include:

William E. Adams, Chicago, Surgical Treatment of Carcinoma of the Esophagus.
Guy A. Caldwell, New Orleans, Diagnosis and Treatment of Low Back Pain Resulting from Trauma.
Roland S. Cron, Milwaukee, Endometriosis
Joseph S. D'Antoni, New Orleans, Chronic Diarrheas.
Robert Elman, St. Louis, Preoperative and Postoperative Use of Intravenous Fluids.
George H. Ewell, Madison, Wis., Anuria
Howard K. Gray, Rochester, Minn., Surgery of Malignant Lesions of the Stomach.
Russell L. Haden, Cleveland, Precipitating and Accelerating Factors in Arthritis.
John S. Lockwood, New York, Anticoagulants in Prevention and Treatment of Thrombosis and Embolism.
Douglas W. Macomber, Denver, Practical Suggestions in Early Treatment of Common Wounds.
Robert A. Moore, St. Louis, Nature of Endocarditis and the Effect of Penicillin in Healing.
Eugene P. Pendergrass, Philadelphia, How to Prevent Death from Breast Cancer.
Curtice Rosser, Dallas, Surgical Lesions of the Left Colon.
Leon Schiff, Cincinnati, Diagnosis of Gastric Cancer.
William D. Stroud, Philadelphia, Coronary Artery Disease.
Willard O. Thompson, Chicago, Uses and Misuses of Sex Hormones.

Exhibits, dinners and luncheons are included in the program. The $15 registration fee should be sent to the Kansas City Southwest Clinical Society, 630 Shukert Building, Kansas City 6.

NEW YORK

Arrange Lectures for County Societies.—The Medical Society of the State of New York and the New York State Department of Health have arranged two lectures of postgraduate instruction for the Tompkins County Medical Society. Dr. Lewis I. Sharp, New York, will speak on "The Recognition and Management of Psychosomatic Problems in General Practice" September 15 at the Tompkins County Memorial Hospital, Ithaca, at 8:30 p. m. On November 17 the society will hear Dr. Ralph R. Tompsett, New York, speak on "Antibiotics." For the Otsego County Medical Society a Teaching Evening has been arranged by the county and state societies to be held at the Elks Club in Oneonta September 10. Dr. Joe W. Howland, Rochester, will speak on "Medical Aspects of the Atomic Bomb" and Dr. Julius Redish Lynbrook, N. Y., on "Hypertension and Hypertensive Heart Disease."

Annual Academy Graduate Fortnight.—The Graduate Fortnight of the New York Academy of Medicine will be held October 6-17. The program includes morning panel discussions; afternoon clinics, evening lectures, scientific exhibits and demonstrations relating to disorders of metabolism and the endocrine glands. Out of state physician speakers for the evening lectures are:

Hans Selye, Montreal, Hypertension.
John S. L. Browne, Montreal, the Carpenter Lecture, Adaptation Syndrome in Man.
Louis H. Newburgh, Ann Arbor, Energy Metabolism in Obese Persons.
Abraham White, Ph.D., New Haven, Conn., Relations of the Adrenals to Immunity.
DeWitt Stetten Jr., Boston, Studies in Intermediary Metabolism Conducted with the Aid of Isotopic Tracers.
Daniel C. Darrow, New Haven, Conn., Disturbances in Electrolyte Metabolism in Man and Their Management.
William C. Rose, Urbana, Ill., Role of Amino Acids in Nutrition.
Nathan Shock, Baltimore, Metabolic Functions in Old Age.
Rulon W. Rawson, Boston, Hormonal and Chemical Factors Regulating Thyroid Function.
Edwin B. Astwood, Boston, Clinical Experiments with Antithyroid Compounds.
E. Perry McCullagh, Cleveland, Testicular Dysfunction, Some Clinical Aspects.
Carl G. Heller, Portland, Ore., Use of Androgens in Men.
Arthur T. Hertig, New Haven, Conn., Why Do Women Abort?
Joseph E. Markee, Ph.D., Durham, N. C., Morphological Basis for Menstrual Bleeding.

The registration fee is $5. Complete programs will be sent to nonmember physicians on request. Address Dr. Mahlon Ashford, 2 East 103d Street, New York 29.

New York City

Personals.—Dr. Oswald R. Jones, assistant clinical professor of medicine, Bellevue Hospital Columbia University College of Physicians and Surgeons, New York, has been appointed to a five year term as chairman of the state tuberculosis committee. ——Dr. Richard Kovacs has been elected an honorary member of the Royal Society of Medicine, Section of Physical Medicine, London.——Dr. Jacob M. Gershberg, New York, president of the International Spanish Speaking Association of Physicians, is on a trip to Mexico and Latin America to arrange a congress of Latin American physicians.

Research in Geriatrics.—The New York University College of Medicine and Memorial Hospital for the Treatment of Cancer and Allied Diseases, Welfare Island, will begin a project in research of old age diseases in September. The program will be carried out at the hospital by a staff of university research specialists under the supervision of Dr. J. Murray Steele, associate professor at the College of Medicine and director of the university's Third Medical Division at the hospital. Patients will be available for research over ten to fifteen years, which will make possible a continuous study of old age diseases as they affect the individual. The project calls for the study of a maximum of 10 patients at one time.

NORTH CAROLINA

Personals.—Dr. Charles W. Armstrong, Salisbury, was elected president of the Kiwanis International at the annual convention of the organization in Chicago in July. Dr. Armstrong, a graduate of the University College of Physicians and Surgeons, Baltimore, 1914, who has been health officer of Rowan County for nearly thirty years, was elected to the North Carolina State Board of Medical Examiners in 1944 and was president of the North Carolina Tuberculosis Association in 1941. He is now a director of the National Tuberculosis Association.——William A. Perlzweig, Ph.D., professor of biochemistry, Duke University School of Medicine, Durham, left August 17 to serve as a special adviser in the organization of the Hebrew University-Hadassah Medical School in Palestine.

OHIO

Research on Poliomyelitis.—Dr. Albert B. Sabin, professor of research pediatrics, University of Cincinnati College of Medicine, and attending pediatrician, Cincinnati Children's Research Hospital Foundation, will direct a $50,000 research program at the local foundation through funds supplied by the National Foundation for Infantile Paralysis, Inc., New York. The $50,000 grant will be used for study of the propagation of poliomyelitis viruses in mice of varying genetic constitutions and the immune response of patients to viruses recovered from their own alimentary tracts. He will investigate also whether the absence of epidemics of poliomyelitis in certain countries can be correlated with the development of immunity at an earlier age.

Admission of Mental Patients.—A new plan for handling patients who might be mentally disturbed has been put into action by the Probate Court and the Cincinnati General Hospital. The plan eliminates the necessity of such patients appearing in court under the impression that they have been accused of wrong doing. After examination by the psychiatrist of the Probate Court and of the General Hospital, the judge is left to decide whether the patient should be sent to Longview Hospital or be discharged. The plan was worked out by Judge Davies and Dr. Maurice Levine, with Dr. Milton Rosenbaum, professor of psychiatry and associate director of hospital psychiatric service, University of Cincinnati College of Medicine; Henry Hooper, superintendent, and Mrs. Elizabeth B. Trier, director of social service, all of General Hospital; Dr. Earl A. Baber, assistant professor of psychiatry, University of Cincinnati College of Medicine, and superintendent of Longview Hospital; Ed Penno, staff member; Dr. Douglas A. Johnston, Cincinnati, and Dr. James Robert Hawkins, psychiatrists.

TENNESSEE

Society News.—A Tennessee State Society of Pathologists was formed at the state medical meeting in Memphis in April by fourteen pathologists from various sections of the state. Dr. Alfred Golden, Memphis, was elected president; Dr. William A. De Monbreun, Nashville, vice president, and Dr. Thomas C. Moss, Memphis, secretary-treasurer.

Course in Anesthesiology and Obstetrics.—The postgraduate course in anesthesiology and obstetrics under the direction of Dr. Robert A. Hingson has been extended from a two week period to one month in order to give the matriculating physicians an opportunity to secure more clinical experience.

This course operated during 1943 and 1944 in the Philadelphia Lying-In Hospital. Since 1945 it has been conducted by the departments of obstetrics and gynecology and anesthesiology of the University of Tennessee College of Medicine at the John Gaston Hospital, Memphis. The next session begins September 15.

WASHINGTON

Health Officer of Spokane.—Dr. Jack B. Eason, Olympia, assumed duties as health officer of Spokane July 1. A graduate of Jefferson Medical College of Philadelphia, 1930, he has been health officer for the district including Thurston and Mason counties and the cities of Olympia and Shelton.

Classes for Spastic Children.—Special classes for spastic children will be set up soon in various parts of the state to help them by means of education, physical therapy and other aids. A series of screening clinics will be held to select the limited number who can benefit from the facilities offered. The state departments of public instruction and health have appointed an advisory committee. Plans are under way for expanding spastic classes now supported by several school systems as well as establishing new classes.

GENERAL

Obstetricians, Gynecologists and Abdominal Surgeons.—In the August 23 issue of The Journal, page 1498, the name of Dr. Clifford V. Ward, Montreal, was inadvertently omitted from the program of the annual meeting of this group. Dr. Ward spoke by invitation on "Blood Platelet Studies During Pregnancy and the Puerperium."

National Safety Congress.—The National Safety Congress and Exposition will be held in Chicago October 6-10. Sensitization Dermatoses, Primary Irritation Dermatoses and the Effect of New Industrial Chemicals on the Skin will be discussed October 8 at the Congress Hotel with Dr. Frederick W. Slobe, Chicago, presiding. Friday morning Dr. Ralph S. McLaughlin, Industrial Health Foundation, Charleston, W. Va., will speak on "Methods for Saving Eyes from Chemical Burns" at the Stevens Hotel at 9:45.

Dr. Telfer Named China Health Aid.—The World Health Organization has appointed Dr. James G. Telfer, Washington, D. C., as port health expert for China. He will help the Chinese ministry of health establish a training center for port and quarantine work. The staff selected by Dr. Telfer will first come to the United States for instruction. Dr. Telfer, on the staff of the U. S. Public Health Service for twelve years, served in the Hong Kong-Canton area in 1939-1940 and in the Philippines both before and after that time.

Tuberculosis Society Elections.—At the recent meeting of the National Tuberculosis Association in San Francisco the following officers were elected: Dr. James R. Reuling, Bayside, N. Y., president; Dr. Herbert L. Mantz, Kansas City, Mo., president-elect, and Dr. H. Stuart Willis, Sanatorium, N. C., secretary.——The National Trudeau Society elected Dr. Howard W. Bosworth, Los Angeles, president; Dr. H. Corwin Hinshaw, Rochester, Minn., president-elect, and Dr. David A. Cooper, Philadelphia, secretary-treasurer.——The National Conference of Tuberculosis Secretaries has elected Mr. Donald E. Pratt, St. Louis, president.

Impostor Solicits Accounts of Deceased Physician.—Notice has been received of a man, posing as a representative of the American Medical Association, calling on a doctor's widow for the purpose of soliciting accounts left by her husband. The heading on his listing sheet is A. M. A., Department of Estates, Offices at Hill City, South Dakota, P. O. box 265. The American Medical Association employs no such individual nor has it any association with an individual empowered to solicit accounts in this fashion. Furthermore, the Association would appreciate any information concerning this man or any other of his kind so that whatever action is indicated can be taken.

Special Society Elections.—The American Federation for Clinical Research has elected as officers for the coming year Drs. Paul M. Aggeler, San Francisco, president; John S. La Due, New York, secretary; Charles H. Rammelkamp, Cleveland, treasurer. Meetings of the organization for this year are: Far Western Section at the San Francisco County Medical Building, San Francisco, November 6; Midwestern Section at the Knickerbocker Hotel, Chicago, October 30; Eastern Section at Cornell University Medical College, New York, December 12, and Southern Section at the Roosevelt Hotel, New Orleans, January 30; national meeting, Atlantic City, May 4, 1948.

Prevalence of Poliomyelitis.—Reports of cases of poliomyelitis for the periods indicated have been received from the division of public health methods, U. S. Public Health Service:

	Week Ended			Total to		Total *	
Division and State	Aug. 23, 1947	Aug. 24, 1946	Median, 1942-1946	Aug. 23, 1947	Aug. 24, 1946	March 16-Aug. 23, 1947	March 17-Aug. 24, 1946
New England:							
Maine	2	2	2	11	11	8	11
New Hampshire	3	13	4	10	76	6	75
Vermont	2	4	1	14	17	6	13
Massachusetts	27	17	17	85	63	78	59
Rhode Island	13	3	1	60	13	59	13
Connecticut	6	2	16	32	36	29	28
Middle Atlantic:							
New York	54	105	105	245	455	209	422
New Jersey	16	16	26	64	107	58	101
Pennsylvania	21	16	16	117	109	103	97
East North Central:							
Ohio	50	48	30	153	276	143	261
Indiana	4	20	16	44	107	28	102
Illinois	53	183	121	231	845	209	837
Michigan	25	76	13	126	313	102	305
Wisconsin	21	95	15	57	246	33	233
West North Central:							
Minnesota	20	263	14	86	1,612	73	1,611
Iowa	8	43	15	63	254	55	245
Missouri	6	95	10	48	478	38	471
North Dakota	13	40	2	49	161	44	161
South Dakota	1	74	0	4	219	2	219
Nebraska	18	29	9	104	213	97	212
Kansas	8	60	6	49	413	31	409
South Atlantic:							
Delaware	29	3	1	71‡	8	71‡	8
Maryland	7	12	9	33	39	27	37
District of Columbia	0	2	2	5	8	3	7
Virginia	9	11	11	54	60	44	54
West Virginia	8	5	5	31	37	27	34
North Carolina	17	4	4	62	60	47	53
South Carolina	0	0	4	10	18	9	15
Georgia	4	14	2	39	101	32	93
Florida	2	11	2	61	437	36	388
East South Central:							
Kentucky	0	10	10	22	67	21	64
Tennessee	1	19	10	41	85	29	76
Alabama	5	21	5	33	288	20	285
Mississippi	6	22	2	29	186	12	169
West South Central:							
Arkansas	1	38	4	44	201	33	189
Louisiana	0	21	2	41	229	23	210
Oklahoma	1	13	7	33	219	22	213
Texas	7	34	34	125	664	100	636
Mountain:							
Montana	4	8	1	15	63	13	47
Idaho	11	1	0	67	10	57	10
Wyoming	1	12	2	11	61	8	60
Colorado	1	78	12	33	502	28	501
New Mexico	2	9	3	13	77	10	76
Arizona	6	8	3	23	67	20	64
Utah	0	8	8	7	44	2	38
Nevada	0	0	0	0	3	0	3
Pacific:							
Washington	8	31	16	66	164	58	131
Oregon	6	12	12	34	59	29	55
California	22	195	24	536	873	387	786
Total	529	1,806	...	3,191†	10,654‡	2,579†	10,187‡
Median, 1942-1946	...	....	931	5,239		4,842	

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* Last two columns show reported incidence since approximate seasonal low week (week ended between March 15 and 21).

† Includes delayed reports of 18 cases, Delaware.

‡ Figures changed by corrected reports.

CORRECTION

Eosinophilic Granuloma of Bone.—The author of the communication entitled "Eosinophilic Granuloma of Bone" in The Journal, August 16, page 1437, desires that the words "to the paper" be inserted in the eleventh line after the word "made."

Marriages

Zenas W. Ford Jr., Fayetteville, Ark., to Miss Virginia Fern Marsh in Ancon, Canal Zone, April 8.

Ward L. Oliver, Cobleskill, N. Y., to Miss Virginia M. Loucks of Gloversville April 8.

John T. Branciforte, Bondsville, Mass., to Miss Helena E. Wilga of Ware April 13.

Paul M. Brenner, Quincy, Ill., to Miss Elizabeth Brasfield of Hickman, Ky., May 3.

Deaths

Elliott Carr Cutler ✠ Moseley professor of surgery at Harvard Medical School and at the graduate school in Boston, died at his home in Brookline, Mass., August 16, aged 59, of carcinoma of the prostate. Dr. Cutler was born in Bangor, Maine, in 1888, and graduated from Harvard Medical School in 1913. At the outbreak of World War I he was placed in charge of the first Harvard medical unit in Paris, receiving a captain's commission in May 1917 and a promotion to major when placed in charge of Base Hospital number 5. Returning to civilian life in 1919, he became an instructor in surgery at Harvard and in 1921 was named chairman of the department of surgery and the laboratory of surgery. He served as professor of surgery at Western Reserve University School of Medicine and director of surgery at Lakeside Hospital, Cleveland, from 1924 to 1932, when he succeeded the late Dr Harvey Cushing as Moseley professor of surgery at Harvard and chief surgeon at the Peter Bent Brigham Hospital.

During the early part of World War II he was head of the medical aid division of the Massachusetts Committee on Public Safety. In 1942 he became colonel in the medical corps, Army of the United States, and later was promoted to brigadier general. He served with distinction as chief consultant in surgery and as chief of professional services in the European Theater of Operations and in 1945 was appointed consultant to the Veterans Administration. He was awarded the Legion of Merit, the Distinguished Service Medal with Oak Leaf Cluster, the Order of the Empire by King George VI of Great Britain, the Croix de Guerre by the French government, Companion of the Order of the Bath, and Chevalier of the Legion of Honor. At the time of his death Dr. Cutler was consultant to the surgeon general of the army and a member of the special medical advisory committee to the Secretary of War. He was a founder of the American Board of Surgery, a member of the American Surgical Association, Society of Clinical Surgery, New England Surgical Society, American Heart Association, American Association for Thoracic Surgery, American Society for Clinical Investigation, Society of Experimental Biology and Medicine, American Society for Experimental Pathology and the Association of Military Surgeons of the United States. Dr. Cutler was a member of the Committee for the Protection of Medical Research of the American Medical Association. In 1927 he was elected a member of the Royal Academy of Medicine of Rome, an honorary fellow of the Royal College of Surgeons of England and was a member of other scientific societies in this country and abroad He was a fellow of the American College of Surgeons. An honorary degree was conferred on Dr. Cutler by the University of Strasbourg, France, in 1938 and by the University of Rochester, Rochester, N. Y., in 1946. He was the author with Dr. Robert Zollinger of "Atlas of Surgical Operations," an associate editor of the *American Journal of Surgery* and a member of the editorial board of the *British Journal of Surgery*. He was a member of the board of overseers of Harvard University from 1927 to 1932 and president of the Associated Harvard Clubs, 1936-1937. Among his numerous other publications was an extensive article in the *Archives of Surgery* in 1924 on the Surgical Treatment of Mitral Stenosis in which he reported what was said to be the first successful operation on the valves of the human heart.

Hibbert Winslow Hill, Hackensack, Minn.; born in St. John, N. B., Sept. 16, 1871; M. B., University of Toronto Faculty of Medicine in 1893, with a postgraduate scholarship; appointed demonstrator in pathology and bacteriology and in charge of the clinical laboratory of the Toronto General Hospital; in 1895 took a postgraduate course in bacteriology at the Johns Hopkins Hospital; during the following years served as director of the bureau of laboratories for the Brooklyn health department and of the Boston board of health; in 1899 received the Starr Gold Medal with an M.D. from Toronto University; during his residence in Boston was extramural instructor in bacteriology at Harvard Medical School; for many years assistant director of the laboratories and epidemiologist for the Minnesota State Board of Health and assistant professor of bacteriology at the University of Minnesota; served as director of the Institute of Public Health in the University of Western Ontario, London, where he was professor of public health and medical officer of health of the city of London; for many years executive secretary of the Minnesota Public Health Association; during World War I served on the headquarters staff of the First Military District of Canada; later appointed director of laboratories of the Vancouver General Hospital and professor of bacteriology and of nursing and health in the University of British Columbia; served as chairman of the laboratory section of the American Public Health Association and as a member of various committees of that section; at one time editor of the *Minnesota Public Health Journal;* author of the "New Public Health", "Sanitation for Public Health Nurses," "New Hygiene" and contributed to other volumes; one of the founders of the Boston Bacteriological Club; member of many medical and scientific societies; in 1930 received the honorary degree of LL.D. from the University of Western Ontario; died May 23, aged 75, of complications from a spinal cord lesion.

Thomas Henshaw Kelly ✠ San Francisco; born in Covington, Ky., Jan. 5, 1890; Medical Department of the University of Cincinnati, 1914; associate clinical professor of obstetrics and gynecology at the Stanford University School of Medicine, where he had been acting chairman of the department, 1944-1945; past president and secretary of the San Francisco County Medical Society; past president of the San Francisco Gynecological Society; member of the House of Delegates of the American Medical Association in 1935; secretary of the National Federation of Obstetrical and Gynecological Societies; fellow of the Pacific Coast Society of Obstetrics and Gynecology; member of the council from 1929 to 1938 and chairman of the council from 1933 to 1936, California Medical Association; trustee from 1939 to 1945, chairman of the executive committee, assistant secretary and later assistant treasurer of the California Physicians' Service from 1939 to 1944; served during World War I; chief of the obstetric service, Mount Zion Hospital; on the staff of St. Francis Hospital; founded and was first editor of the *Bulletin of the San Francisco County Medical Society;* died May 10, aged 57, of coronary occlusion.

George Wade Wilson, Venice, Calif.; born in St. Louis in 1891; St. Louis University School of Medicine, 1914; assistant in medicine and pathology from 1915 to 1917 and since 1924 associate professor of medicine at his alma mater; assistant in pathology and bacteriology at the Rockefeller Institute for Medical Research in New York from 1917 to 1919; professor and head of the departments of pathology, bacteriology and preventive medicine at the Loyola University School of Medicine in Chicago, 1919-1920, and associate in medicine at the Washington University School of Medicine in St. Louis from 1920 to 1924; at one time associate professor of clinical medicine at the University of Southern California School of Medicine in Los Angeles; served on the staffs of St. Vincent's Hospital in Los Angeles, Mercy Hospital in Chicago and Jewish, Barnes and Missouri Pacific hospitals in St. Louis; formerly consultant to the New York Central Railroad; shot and killed by a patient June 6, aged 55.

Walter Hobert Watterson ✠ La Grange, Ill.; born in Fairbury, Ill., Feb. 12, 1875; Northwestern University Medical School, Chicago, 1901; member of the American College of Chest Physicians; member and past president of the Chicago Tuberculosis Society; fellow of the American College of Physicians; served during World War I; affiliated with the Zace Sanitarium in Winfield and the West Lake Hospital in Melrose Park; formerly on the staff of the Veterans Administration Facility in Hines, Ill., superintendent of the Chicago Municipal Tuberculosis Sanitarium, Lake Breeze Sanitarium in Waukegan, Ill., and the Pokegama Sanitarium in Pokegama, Minn.; at one time affiliated with the Cook County Tuberculosis Hospital in Oak Forest, Ill.; formerly instructor in tuberculosis for the U. S. Public Health Service; died June 17, aged 72, of heart disease.

Edward L. Hanes ✠ Rochester, N. Y.; born in Chenango Forks, N. Y., Jan. 2, 1871; Albany Medical College, 1899; past president of the Rochester Academy of Medicine; member of the Rochester Pathological Society and the American Psychiatric Association; fellow of the American College of Physicians; during World War I in charge of the neuropsychiatric division of base hospital number 19, serving overseas; later served as consultant in neuropsychiatry for the Veterans Administration; served on the staffs of the Craig Colony in Sonyea, Hudson River State Hospital at Poughkeepsie, Rochester State Hospital, Rochester General Hospital, St. Mary's Hospital and the Genesee Hospital; author of "Minds and Nerves of Soldiers"; died in Altadena, Calif., June 14, aged 76, of coronary disease.

Rood Taylor, La Jolla, Calif.; born in Columbia, S. D.,
May 12, 1885; University of Michigan Departme
and Surgery, Ann Arbor, 1910; clinical associ
pediatrics at the University of Minnesota Me
formerly associate professor of rics at
Minnesota Graduate School; time a
on pediatrics at the Mayo C ochest
of the American Pediatric S eived
from the University of Mi 917;
of hypertensive heart dis

Otis Johnson Baldwin, Chicago; St. Louis University School of Medicine, 1903; member of the American Medical Association; affiliated with the West Suburban Hospital in Oak Park and St. Ann's Hospital; formerly on the staffs of the Chicago and the Kankakee (Ill.) state hospitals; died June 25, aged 79, of gastric ulcer and heart disease.

Malcolm Campbell ⊕ New York; Medical College of Virginia, Richmond, 1901; professor of gynecology and obstetrics at the New York Polyclinic Medical School and Hospital; fellow of the American College of Surgeons; served during World War I; on the staff of St. Clare's Hospital; died June 1, aged 71, of coronary thrombosis.

Charles Broadway Danruther, La Porte, Ind.; Indiana University School of Medicine, Indianapolis, 1914; member of the American Medical Association; served as city health officer and as county coroner; died in the Holy Family Hospital June 16, aged 55.

Arthur Lardovic Duplantis, Chicago; Chicago College of Medicine and Surgery, 1913; member of the American Medical Association; died June 29, aged 65, of coronary thrombosis.

Robert Lee Edwards, Salem, Ore.; University of Oregon Medical School, Portland, 1914; member of the American Medical Association; died June 7, aged 67, as the result of injuries received in an automobile accident in August 1946.

Floyd Lester Gilles ⊕ Minneapolis; Syracuse University College of Medicine, 1917; served during World War I; on the staffs of the Asbury Hospital and Fairview Hospital; died recently, aged 55, of heart disease.

William H. Goodrich ⊕ Augusta, Ga.; University of Georgia Medical Department, Augusta, 1897; emeritus professor of clinical gynecology at his alma mater, where he formerly served as dean; formerly medical superintendent of the University Hospital; accidentally drowned recently while fishing in Port Royal Sound, S. C., aged 73.

Adam Mader Hauer ⊕ Lebanon, Pa.; Johns Hopkins University School of Medicine, Baltimore, 1939; diplomate of the National Board of Medical Examiners; interned at the Lancaster General Hospital in Lancaster; served overseas in the medical corps, Army of the United States, during World War II; city school physician; associate surgeon, Good Samaritan Hospital; drowned May 11, aged 33, when his boat was swept over the Holtwood Dam on the Susquehanna River while fishing.

Maude Noble Haven, San Francisco; Cooper Medical College, San Francisco, 1900; formerly on the staff of the Stanford University Hospital where she died May 28, aged 74.

Peter Matthias Holl, Minneapolis; Minnesota Hospital College, Minneapolis, 1887; Bellevue Hospital Medical College, 1888; served as city physician; member of the American Medical Association; died in the Northwestern Hospital recently, aged 84, of arteriosclerotic heart disease and encephalopathy.

John Conrad Holzberger ⊕ Brooklyn; Long Island College Hospital, Brooklyn, 1915; specialist certified by the American Board of Otolaryngology; member of the American Academy of Ophthalmology and Otolaryngology; fellow of the American College of Surgeons; served during World War I; on the staffs of the Brooklyn Eye and Ear, Bethany Deaconess and Wyckoff Heights hospitals; died May 31, aged 54.

Ben Hudson, Springfield, Ill.; St. Louis Medical College, 1885; died in St. Louis May 15, aged 86, of a fractured hip received in a fall.

Sam Jaeggli, Moulton, Texas; Tulane University of Louisiana School of Medicine, New Orleans, 1920; member of the American Medical Association; served in the Texas National Guard on the Mexican border and during World War I; died recently, aged 55, of coronary thrombosis.

Galvin Luther Johnson ⊕ Pauls Valley, Okla.; Memphis (Tenn.) Hospital Medical College, 1903; served as vice president of the Oklahoma State Medical Association and as a member of the state board of medical examiners; affiliated with the Lindsey-Johnson-Shirley Hospital; died May 11, aged 67, of heart disease.

Ellis Adrian Johnston, Seattle; Northwestern University Medical School, Chicago, 1904; served in the medical corps of the U. S. Army as a captain and with the American Expeditionary Forces during World War I; formerly health officer of Helena, Mont., where he served as coroner of Lewis and Clark County; died suddenly June 4, aged 70, of coronary thrombosis.

Sherman J. Jones, Hastings, Neb.; College of Physicians and Surgeons, Keokuk, Iowa, 1891; Rush Medical College, Chicago, 1898; member of the American Medical Association; on the staff of the Mary Lanning Memorial Hospital; died May 26, aged 86, of arteriosclerosis.

Edward Philip Kennedy, Swaledale, Iowa; State University of Iowa College of Medicine, Iowa City, 1912; member of the American Medical Association; health officer; on the staff of St. Joseph's Mercy Hospital in Mason City, where he died May 27, aged 65, of coronary occlusion.

Solomon S. Kerr, Lincoln, Ill.; Chicago College of Medicine and Surgery, 1917; affiliated with the Lincoln State School and Colony; died May 20, aged 66.

Elmer Christian Kieffer, Reading, Pa.; Medico-Chirurgical College of Philadelphia, 1899; died recently, aged 73.

Joe Hilliard Kirby Jr., Loris, S. C.; Tulane University of Louisiana School of Medicine, New Orleans, 1942; interned at the Medical College of Virginia, Hospital Division, Richmond; member of the American Medical Association; served in the medical corps, Army of the United States, during World War II; died in New Orleans May 16, aged 29, of acute leukemia.

Casimir Boleslaus Kitowski ⊕ San Antonio, Texas; University of Texas School of Medicine, Galveston, 1915; served during World War I; examining physician for the Selective Service system in Bexar County during World War II; member of the staffs of the Nix, Physicians and Surgeons and Medical and Surgical Memorial hospitals; died recently, aged 58, of cerebral hemorrhage.

Wilhelm Edmund Harmon Krechting ⊕ Washington, D. C.; Johns Hopkins University School of Medicine, Baltimore, 1906; died May 27, aged 69, of cerebral hemorrhage.

Thomas Downs Laftry, Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1899; member of the American Medical Association; medical director of the Great Northern Life Insurance Company; for many years affiliated with the Norwegian-American Hospital, where he died May 23, aged 79, of agranulocytosis.

Louis A. Larson, Kane, Pa.; Jefferson Medical College of Philadelphia, 1896; died June 5, aged 75, of coronary thrombosis.

Julian Dyer Lucas, Brookline, Mass.; Tufts College Medical School, Boston, 1902; served during World War I; died June 3, aged 69.

Earl Lane Lupton, Sebastopol, Calif.; College of Physicians and Surgeons, Los Angeles, 1917; served during World War I and as public health director in Los Angeles city and county; died June 5, aged 52, of gastric hemorrhage.

Fred Houston Mecom ⊕ Columbia, La.; Memphis (Tenn.) Hospital Medical College, 1907; served during the Spanish-American War; died June 3, aged 69, of cerebral hemorrhage.

George Alfred Plummer ⊕ Rochester, N. Y.; Keokuk (Iowa) Medical College, College of Physicians and Surgeons, 1902; member of the Iowa State Medical Society; past president of the Howard (Iowa) County Medical Society; fellow of the American College of Surgeons; served during World War I; formerly president of the board of education of Cresco, Iowa, where he was health officer and on the staff of St. Joseph Mercy Hospital; died May 23, aged 68.

Lilburn Woods Renfro ⊕ Seattle; Rush Medical College Chicago, 1913; served during World War I; died May 3, aged 70, of coronary thrombosis.

Nicholas Aloys Schneider ⊕ St. Louis; St. Louis University School of Medicine, 1921; formerly on the faculty of his alma mater; on the staffs of the Alexian Brothers Hospital and St. Anthony's Hospital, where he died May 3, aged 50, of hemorrhage of the spleen.

Stephen Herbert Smith ⊕ Pasadena, Calif.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1905; specialist certified by the American Board of Internal Medicine; fellow of the American College of Physicians; medical director of the Las Encinas Sanitarium; died June 3, aged 66, of coronary thrombosis.

Ernest Brent Thompson, El Paso, Texas; Vanderbilt University School of Medicine, Nashville, 1914; member of the American Medical Association; served during World War I; died recently, aged 58, of diabetes mellitus and acute appendicitis.

Frank Warren White, Rockwood, Pa.; Tufts College Medical School, Boston, 1907; member of the American Medical Association; died recently, aged 66, of congestive heart disease.

Martha Alice Wood ⊕ Houston, Texas; University of Texas School of Medicine, Galveston, 1903; member of the South Texas District Medical Society, Texas Society of Pathologists and the American Society of Clinical Pathologists; for many years director of the clinical laboratory and of pathology at the Methodist Hospital; died recently, aged 69, of coronary occlusion.

Foreign Letters

LONDON

(From Our Regular Correspondent)

July 26, 1947.

Medical Cooperation with the Dominions

At a meeting of the council of the British Medical Association the president, Sir Hugh Lett, introduced the report of a special committee which had been considering means for securing closer liaison with the British dominions in matters affecting the common interests of practitioners in them and in Britain. The need for this had been strongly felt by the committee, which proposed that the Canadian Medical Association, the Federal Council of the Association in Australia, the New Zealand branch of the association, the South African Medical Association, the Medical Association of Eire, the Newfoundland Medical Association and the branches of the association in southern Rhodesia be invited to cooperate with the council in London in establishing a "British Commonwealth Medical Council" for the purpose of developing closer contact between practitioners in Britain and in the various dominions, for advancing the status of British medicine, for the discussion and exchange of views on matters of common interest and for promoting an exchange of professional facilities. Each member association would appoint three representatives on the Commonwealth Council, which would meet at least once a year, first in London in 1948.

Arising out of this was the important point of men who came to London for postgraduate work and in some cases for undergraduate work. A number of bodies were interested in these people, but there was no communication among them and there was a certain amount of overlapping. The committee felt that when a medical man came to London on a visit from the dominions he should be advised to go straight to the British Medical Association, where he would be given information and help in various directions on both the academic and social sides. It was not merely a matter of formal arrangements for study but of a personal welcome. It was therefore further proposed that the principle of establishing an Empire Medical Advisory Bureau at the British Medical Association House to assist practitioners, particularly those from the dominions and colonies, visiting Britain, be approved, and that the secretary be instructed to draw up a detailed plan for the consideration of the council. The proposal was adopted.

Penicillin Treatment of Osteomyelitis in Childhood

The striking improvement in the results of treatment of staphylococcic osteomyelitis of children due to penicillin is well known. But the results in a series of unselected cases at the National Hospital for Sick Children, Great Ormond Street, mark an advance by showing the extent to which operation for removal of the affected bone can be discarded. They were recorded in the *British Medical Journal* May 31 by T. Twistington Higgins, Denis Browne and Martin Bodian. The details of treatment are important since there is no agreement as to the dosage of penicillin or as to the surgical intervention which may be necessary in addition. In 31 consecutive cases of acute osteomyelitis 16 occurred under 1 year of age, the others ranging up to 12 years. The lesions were in the long bones in 23 cases, other sites being the external cuneiform, frontal bone, sternum and maxilla. In 4 the infection had spread to a neighboring joint. Soft tissue abscesses occurred in 12 cases and septicemia in 3. The duration of the disease before admission was less than one week in 19, up to four weeks in 8, and up to eight weeks in 3. Staphylococcus aureus was grown from the blood stream in 2 cases and from abscesses or joints in 12.

Penicillin treatment was begun at once without waiting for the bacteriologic report. The dosage was 1,000 units every twenty-four hours per pound of body weight given by intramuscular injection at intervals of four hours. It was considered safest to continue this treatment for at least three weeks. In the surgical treatment the limb was immobilized in plaster so that inspection of the affected region and aspiration could be performed easily. Immobilization was not prolonged much beyond the period of penicillin treatment. The treatment differed from that generally followed in 13 cases in which pus formed outside the infected bone. In all these the pus was aspirated at intervals depending on the rate of reformation—in most cases daily for the first few days, then at longer intervals. The pus was always replaced by injecting penicillin in a dose of 2,000 to 5,000 units.

In all cases, to the authors' surprise, pus finally ceased to form and healing was complete without sinus formation. The advantage of this conservative treatment was that it avoided the disastrous change in outlook which occurs when the single penicillin controllable infection becomes complicated by nonsensitive organisms. The immediate clinical results were striking. Children admitted in great pain with high temperatures were happy again within forty-eight hours. Soft tissue swellings without formation of pus usually subsided in four or five days. Functional results were perfect in all cases but 1.

There was another series of 4 cases of acute suppurative arthritis. These were treated with aspiration and penicillin replacement. Finally there were 5 cases of chronic osteomyelitis: 3 of the rib, 1 of the os calcis, and 1 of the ilium. The affected bone was completely removed. All granulations were carefully scraped away, and penicillin in solution or in powder was instilled. The wound was then sewn up to avoid contamination by penicillin resisting organisms, and firm pressure was applied by elastoplast. Healing took place in all. It is important to note that this treatment is applicable only to cases in which all infected bony and soft tissue can be removed. Cases in which this is not possible, as in the upper end of the femur or in the vertebrae, still remain intractable once a communication has been formed with the surface of the body.

The British Journal of Cancer

Though research on cancer has been active for many years and the Imperial Cancer Research Fund was founded forty-four years ago under the direction of the Royal College of Physicians and Surgeons, it is only now that a journal devoted wholly to cancer has appeared. This quarterly, called the *British Journal of Cancer,* is the official organ of the British Empire Cancer Campaign. The need for a specialized journal became acute during the war years. The synthesis by Kennaway and Cook of the carcinogenic chemicals ten years ago has stimulated research in this and other countries. Discoveries followed in America on pure line breeding and hybridization of mice with a high incidence of mammary cancer, and Bittner's revelation of the tumor agent in the milk of mice. An outlet for the large volume of work had to be found in the two British journals devoted to pathology and bacteriology, the American journals of cancer research and other channels. Because of the lack of special journals, the papers on cancer were widely scattered. According to Professor Kennaway they were dispersed in some sixty journals and annual publications.

The first number is profusely illustrated. In the article on "Invasion of the Internal Mammary Lymph Glands in Carcinoma of the Breast," from the Bland Sutton Institute of Pathology of the Middlesex Hospital, R. S. Handley and A. C. Thackray report that in 4 out of 5 [illegible] cases of cancer of the breast a lymph gland of [illegible] mammary chain, removed through an incision in [illegible] or shortly after operation, was proved histologically to contain carcinoma, though in only 2 cases were there axillary deposits. They suggest that the technic of radical mastectomy should be modified to include removal of the second space internal mammary lymph gland. That might assist the prognosis and the postoperative treatment with radiation. Another article is "Abnormal Mitosis in Tumors," by P. C. Koller and "Induction of an Experimental Tumor of the Lens," by Ida Mann. The author has shown that a tumor can be induced by chemical carcinogens, although the lens is an organ in which tumors never occur naturally. The publishers of the *British Journal of Cancer* are Messrs. H. K. Lewis & Co., Ltd., 136 Gower Street, London W. C. 1. The annual subscription is $8.40.

COPENHAGEN

(From Our Regular Correspondent)

Aug. 7, 1947.

The Frequency of Cirrhosis of the Liver

Half a century ago, cirrhosis of the liver was quite common and was traced to overindulgence in alcohol. Now it has become quite uncommon, and we have become diffident about its genesis and relationship to alcohol. At the hospital De Gamles By, Dr. J. Bock of Copenhagen has scrutinized the findings of 3,177 postmortem examinations conducted in the period 1939-1946. He succeeded in finding 137 cases (4.3 per cent) in which, with only one exception, Laënnec's cirrhosis of the liver was found. As none of the patients in this hospital were under the age of 61, the aforementioned percentage must not be taken as a mirror of the population of Denmark as a whole, but it does show that we have not completely rid ourselves of this disease and that its sex incidence seems to have changed of late. A few years ago, males were supposed to be more prone to this disease than females; but in the present study there were only 47 males to 90 females. In only 5.8 per cent was there a history of chronic alcoholism, and the correct diagnosis was made during life in only 11 cases. Abandoning the cocksure attitude of a past generation, Dr. Bock admits that we must now look for a new factor to explain the present tendency of cirrhosis of the liver to attack elderly women.

Sinusitis in Children

At the Finsen Institute in Copenhagen there is a special "ambulatorium" to which children are sent for light treatment. The head of this department, Dr. Eigil Rekling, and the head of the radiologic department of the Finsen Institute, Dr. Börge Worning, since 1937 have paid special attention to the part played by sinusitis in the chronic, catarrhal conditions of the upper respiratory tract of children. Their recent communication on the subject, published in the June 20 issue of *Nordisk medicin*, covers the year 1938, when 683 children were referred to the "ambulatorium" for diagnosis and treatment. Five hundred of these children between the ages of 3 and 15 were subjected to a systematic examination of the upper respiratory tract with special reference to x-ray findings. Many of them suffered from mucopurulent rhinitis, cough and various conditions commonly associated with tonsillitis and adenoids.

The examiners were surprised to find an impressive proportion of these children, 41 per cent of the boys and 38 per cent of the girls, suffering from sinusitis. By the inclusion of children presenting no signs of sinusitis, this investigation was provided with controls. The maxillary sinus was most often involved, the frontal sinus seldom, and only when the ethmoid sinus was also diseased. The maxillary sinus was never painful or tender, and many of these cases would have been overlooked and labeled as "tonsils and adenoids" but for the telltale evidence of the x-ray examination.

Is Appendicitis a Seasonal Disease?

A generation ago the Nestor of abdominal surgery in Denmark, Professor Rovsing, taught that appendicitis is comparatively frequent in September on account of overindulgence in fruit, and at Christmas time on account of a whole hearted devotion to Christmas fare. He passed these impressions on to his colleagues with the forceful emphasis which made him in many quarters a popular teacher. But were his deductions sound? Hardly, to judge by a study recently undertaken by Dr. Franz Sörensen, who has calculated the monthly incidence of appendicitis dealt with at a hospital in Aalborg in the twenty-five year period January 1922-January 1947. In 2,076 cases the diagnosis of appendicitis was confirmed by operation. His tabulation of cases according to the months in which they began shows a peak of 207 in July and a minimum of 144 in December. Between these two extremes (which in themselves are not very far apart) the cases were distributed among the remaining ten months with remarkable impartiality. More interesting than this refutation of an old fallacy is the disquieting and humiliating observation that 26 per cent of all these patients belonged to the second and third stages of appendicitis, with evidence of peritonitis.

Claims by Patients for Compensation

Recent communications in the medical press show how dangerous the practice of medicine has become for the doctor himself. The problem is largely one of loyalties. A generation or two ago relations between patient and family doctor were so personal and amicable that claims for compensation for mistakes were almost unthinkable. Even now doctors are seldom called to account for their diagnostic mistakes. Perhaps the public does not realize the tremendous importance of a correct diagnosis. In an analysis of 220 claims by patients for damages, Dr. Hans Heckscher has shown that in 36 cases an injection through the skin led to trouble for the doctor; in 10 cases an injection into the forearm was claimed to have led to "paralyses and invalidism" requiring the soothing balm of pecuniary compensation. An eminent jurist, Dagfinn Dahl, has suggested that claims for compensation have become numerous largely because money is now available for meeting such claims out of the pockets of impersonal insurance societies. So we have this curious situation: To protect himself a doctor subscribes to an insurance society and in so doing is asking for trouble. Not that he can avoid it, now that the public has acquired the habit of mulcting insurance societies for the alleged mistakes of doctors. However true the dictum "Insurance breeds claims," we cannot break loose from this vicious circle. In 1941 the Danish Medical Association created a committee to act in an advisory capacity with regard to alleged doctors' mistakes, and now the doctor who makes them, or is accused of making them, has no excuse for the unpardonable folly of dealing directly with the patient and his lawyer.

The Parking of Doctors' Cars

The other day a doctor got into trouble with the police in Copenhagen over the untimely parking of his car. It was quite a trifling incident but it led to a heart to heart talk between the representatives of the two professions, both indispensable to the public and both endowed with the priceless gift of a taste for compromise. The doctors said, in effect, "We do so fully appreciate your sense of law and order," to which the police replied with a friendly bow "We do so appreciate your difficulties when you give your medical services to the public, ourselves included." So it was arranged that some latitude should be shown to doctors over parking rules, provided they were not flagrantly ignored. And the doctors of Copenhagen are put on their honor not to abuse the benevolent inattention of the custodians of the law.

ITALY

(From Our Regular Correspondent)

Florence, June 30, 1947.

Epidemiology and Prophylaxis of Typhoid

Professor G. Mazzetti, director, Hygienic Institute, University of Florence, presented to the medical academy in Pistoia a report on the prophylaxis and epidemiology of typhoid. He spoke briefly on the significance of some epidemics which occurred recently in Prato and in Florence. The epidemiology of typhoid still lacks an explanation for several problems, especially those of epidemics originating in water supplies which cannot be confirmed by bacteriologic investigations.

Professor Mazzetti reviewed the laboratory methods which aid in diagnosis. He emphasized the significance of the antibodies O, H and Vi. The antibodies O are of specific significance in serologic differentiation between patients with typhoid and persons immunized against typhoid-paratyphoid, since in typhoid they appear early and disappear more rapidly than the H antibodies, while in vaccinated persons they do not appear at all or only temporarily, so that the observation of O antibodies in the patient and especially the determination of their increase during the disease can be considered as a definite criterion in the diagnosis of typhoid fever. The search for Vi antibodies is of special importance for tracing carriers of typhoid. Recent papers of foreign authors confirm these observations. This technic is the only means of studying the spread of epidemics of typhoid, by finding the source of the contagion.

Professor Mazzetti recalled the methods of prophylaxis of typhoid, including the vaccines administered by either the subcutaneous or the oral route; he insisted on the usefulness of extending immunization by the oral route.

Technic for Descending Pyelography

Drs. Conzi and Zaccone presented to the Medical Academy of Genoa a report on a new method for carrying out descending pyelography. They pointed out the difficulties that may be encountered in the interpretation of the roentgenograms when normal technics of descending pyelography are used. They recalled the artifices with which experiments have been made for blocking the evacuation of the ureter They had achieved such a blockage by means of a small balloon introduced into the bladder by means of a semirigid catheter. By this means the speakers have achieved a complete and perfect injection of all the superior urinary passages from the smallest details of the calices to the retrovesical portion of the ureter, visible through the air contained in the balloon The pressure is from 40 to 80 mm. of mercury. The use of this method is no more difficult than when using a common catheter; its advantages were demonstrated by roentgenograms presented by the speakers.

BRAZIL

(From Our Regular Correspondent)

Rio de Janeiro, July 15, 1947.

Duration of Life After Coronary Thrombosis

Dr. Jairo Ramos, professor of medicine at the Paulista Medical School of São Paulo, published a study of 100 patients who had been stricken with acute coronary thrombosis. The age of 1 patient at the moment of the attack was 35 years, of 36 patients from 36 to 50, of 41 patients from 51 to 60, of 17 patients from 61 to 70 and of 5 patients 71 and more years. At the moment of the attack the average age of the male patients was 50 years and that of the female patients 64 years. Of the 100 patients 28 died, 4 immediately after the attack, 7 a few months later, 13 between one and three years later and 4 between four and eight years after the attack. Of 72 patients alive at the moment of the study, 39 were living from a few months up to three years, 20 between four and five years and 13 from six to fourteen years. The study of the clinical picture of these patients disclosed six types: 20 patients did not present any symptoms after the attack; 18 patients complained only of pain; 9 patients presented only effort dyspnea; 18 patients presented pains and effort dyspnea; 31 patients presented continuous cardiac failure; 4 patients died from the first attack. Hypertension was present and aggravated the condition in 31 per cent of the patients. The number of patients who died from a second attack was five times as large as the number of those who died from the first. Dr. Ramos's conclusions are that advanced age, cardiac failure, hypertension and a new attack were the most important factors in the duration of life after the first attack.

Tyrothricin as a Means of Purifying Antivariolic Vaccine

After encouraging results obtained by the use of penicillin for the purification of antivariolic vaccine, Dr. Cassio Miranda, head of the Virus Division of the Oswaldo Cruz Institute, Rio de Janeiro, decided to try tyrothricin for a similar purpose. He used tyrothricin (Parke-Davis, for research work) dissolved in a 1 per cent concentration in 95 degree alcohol, this solution diluted in glycerin 1:9, or a final concentration of 1/1,000 of tyrothricin. The glycerinated vaccine pulp was then mixed with the tyrothricin solution in variable proportions: sample 1 had 4 cc. of pulp to 1 cc. of tyrothricin solution, sample 2 had 3 cc. of pulp to 1 cc. of the drug, sample 3 had 2 to 1 and sample 4 had 1 to 1. Sample 5 was glycerinated vaccine pulp without tyrothricin.

For the determination of tyrothricin's action on the associated bacterial flora of the vaccine, amounts of 0.05 cc., 0.1 cc., and 0.2 cc. of samples 1, 2, 3 and 4 were added to 15 cc. of nutrient agar melted at 45 C. in twelve separate incubation plates. Three more plates respectively received 0.05, 0.1 and 0.2 cc. of vaccine pulp without tyrothricin, and all the fifteen plates were incubated at 37 C. for forty-eight hours. Examination of the colonies showed a progressive decrease of the bacterial flora in the different samples of pulp (1, 2, 3 and 4) containing tyrothricin, while in sample 5 (vaccine pulp without tyrothricin) the number of colonies was not reduced. In samples 1 and 2, in spite of the reduction of germs, the number of colonies was still practically incalculable. But in sample 3 (2 parts of glycerinated pulp to 1 part of tyrothricin solution) the plate with 0.2 cc. showed only 1,076 colonies, and in sample 4 (1 part of pulp to 1 part of solution) the plate with 0.2 cc. showed only 49 colonies. Skin inoculation in rabbits demonstrated in all the samples the perfect resistance of the vaccine virus to tyrothricin. The vaccine virus resisted during eighty-five days the antibiotic action, giving positive reactions even in the dilution of 1:1,000.

Tuberculosis of the Female Genitalia

Dr. Arnaldo de Moraes, professor of clinical gynecology at the University of Rio de Janeiro, presented 8 cases of tuberculosis of the female genitalia registered among the last thousand consecutive patients attended in the gynecologic department of the Moncorvo Filho Hospital. The 8 cases were 2 of salpingitis, 2 of endometrio-annexitis, 1 of pelviperitonitis, 1 of salpingo-oophoritis, 1 of endometritis and 1 of cervicitis. In all those cases the provisional diagnosis was made on the basis of the clinical history and the physical examination (e. g. adnexal inflammatory process, amenorrhea, precarious general condition). But the final diagnosis was always made through the microscopic examination (endometrial biopsy or pathologic examination of material removed at operation). The low age of all the patients is worthy of note: 19, 20, 20, 23, 24, 25, 26 and 35 years.

Brief Items

Dr. R. David de Sanson, professor at the University of Rio de Janeiro, has been elected president of the National Academy of Medicine.

The fourth Brazilian Congress of Cardiology will be held in September at Salvador, state of Bahia.

Correspondence

CHOLESTEROL IN THE DIET AND CORONARY DISEASE

To the Editor:—In The Journal August 2, page 1197, Dr. William Dock commented on my recommendation in The Journal of June 7 for a soft diet, including eggs, during the immediate recovery period from myocardial infarction. My recommendation is designed for the immediate recovery period and not as a long range program of management. During that limited period it appears inconceivable that a blood cholesterol level could be altered by the strict limitation of ingested cholesterol.

In the dietary program for myocardial infarction used in my hospital service for the last three years there is a paragraph which reads "after two or three days of this soft diet the indications are to limit the amount of fat, not only because it increases gastric emptying time, but also because there is often a disturbance in cholesterol metabolism associated with coronary disease." It is my established policy to keep people with chronic coronary disease on a low fat intake and to limit their cholesterol intake by advising but one egg a day.

I discussed this problem in a paper entitled "Thoughts on the Prevention of Coronary Disease" (*J. Missouri M. A.* **39**:162 [June] 1942). I have noted the tendency to high cholesterol blood levels in the average middle aged coronary subject and therefore advise these patients to partake not only of a low caloric diet but one particularly low in fats and cholesterol rich substances, such as egg yolks. There is a difference between a dietary program suitable for a short period of convalescence from an acute myocardial infarction and a long-term plan of dietary control designed to defer the further development of atherosclerotic changes.

O. P. J. Falk, M.D., St. Louis.

STREPTOMYCIN TOXICITY

To the Editor:—In the article on Streptomycin Toxicity by my associates and myself in The Journal, June 21, a statement was made that the highly purified streptomycin used in the study was first crystallized in the form of the calcium chloride double salt and "then converted by mild treatment to the sulfate to ensure stability."

It has been brought to my attention that it might be inferred from this statement that the calcium chloride double salt of streptomycin is less stable than the highly purified sulfate. It was not intended to convey any such impression; I am reliably informed that no significant difference exists in the stabilities of these two salts of streptomycin.

Walsh McDermott, M.D., New York.

MONGOLISM

To the Editor:—In an editorial in The Journal, July 26, the statement is made that mongolism is congenital but not hereditary. You urge that physicians be on the watch for a history of infections in the mother. Frequently a mother gives birth to twins with but 1 of them affected. One must conclude that infection was not the cause, since it would have affected both twins, or that the twins responded differently to a common stimulus. In that even the differential response is traced back almost inevitably to genetic factors.

Although direct hereditary descent from parent to child is not known in mongolism, the evidence derived from a study of twins is strongly in favor of there being a genetic factor for mongolism. In all instances in which twins have exhibited mongolism in one or both of the members of the pair, monozygous twins always show both affected, and dizygous twins almost always show but 1 affected. There are 4 instances of dizygous twins reported with both affected. This is not to be wondered at, as there are a number of families on record in which several sibs have mongolism, two families at least with 3 mongoloid children each. The sharp separation of monozygous twins from dizygous twins with the monozygous falling into the group of both affected, and dizygous for the most part into the group with but 1 affected, speaks strongly for a genetic basis for the condition. This is exactly what would be expected if mongolism, which so seldom shows familial distribution, were based on genetic factors. This does not preclude extrinsic factors from playing a role also.

Madge T. Macklin, M.D., Columbus, Ohio.
Research Associate, Ohio State University.

TOXIC ACTION OF EMETINE HYDROCHLORIDE

To the Editor:—With regard to the editorial comment "Toxic Action of Emetine Hydrochloride on the Heart" in The Journal July 19, it may be pertinent to recall my article in the *Journal of Chemotherapy* in January 1929 entitled "Treatment of Chronic Human Amebiasis," in which I wrote "We have come to feel that the best criterion for the limit of tolerance in giving ipecac, and more particularly emetine hydrochloride, is pulse rate, and that administration of the drug must cease entirely if the pulse reaches a rate of 100 to 110 per minute while the patient is ambulatory."

For some years I have tried to keep the pulse rate under 90 per minute each day and the period of daily dosing within two weeks. If the patient tends to be "intolerant" of emetine hydrochloride according to such controls, I stop it entirely. Then no new attempt is made to use this drug for an interval of three to four months.

In my opinion pulse rate is a valuable guide in the administration of emetine hydrochloride.

Luther M. Boyers, M.D., Berkeley, Calif.

DESTRUCTIVE CHANGES PRODUCED BY RADIUM AND ATOMIC ENERGY

To the Editor:—I note that a medical board has been appointed to give medical guidance to the various developments in the field of atomic energy. I should like to bring to your attention that in 1936 the American Medical Association Committee on Therapeutic Research, Council on Pharmacy and Chemistry, gave a grant to the Long Island College of Medicine so that I could produce in animals the destructive changes to the tissues that result from the ingestion of radioactive substances (radium poisoning). Although treatment to reverse this deadly process was our primary problem, all our animals died before the therapeutic plan could be instituted. Recently reviewing our original report published in the *American Journal of the Medical Sciences* in May 1936, and comparing it with the animals exposed to the destructive effects of atomic energy at Bikini Atoll, at present under study by the United States Navy Medical Corps and reviewed at the Centennial meeting of the American Medical Association at Atlantic City, I was greatly impressed with the obvious similarity of the destructive processes.

Edwin J. Grace, M.D., Brooklyn.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

NATIONAL BOARD OF MEDICAL EXAMINERS EXAMINING BOARDS IN SPECIALTIES

Examinations of the National Board of Medical Examiners and the Examining Boards in Specialties were published in THE JOURNAL, Aug. 30, page 1565.

BOARDS OF MEDICAL EXAMINERS

ALABAMA: *Examination.* Montgomery, June 22-24, 1948. Sec., Dr. D. G. Gill, 519 Dexter Ave., Montgomery 4.

ARIZONA: * *Examination.* Phoenix, Oct. 7-8. Sec., Dr. J. H. Patterson, 826 Security Building, Phoenix.

ARKANSAS: * *Examination.* Texarkana, Nov. 6-7, 1947. Sec., L. J. Kosminsky, Texarkana. *Eclectic.* Little Rock, Nov. 6. Sec., Dr. Clarence H. Young, 1415 Main St., Little Rock.

CALIFORNIA: *Written.* Los Angeles, Aug. 25-28. *Oral:* Los Angeles, Nov. 8-9. Sec., Dr. Frederick N. Scatena, 1020 N. St., Sacramento 14.

COLORADO: * Denver, Oct. 8-11. Final date for filing application is Sept. 20. Sec., Dr. J. B. Davis, 831 Republic Bldg., Denver 2.

CONNECTICUT: *Examination.* Hartford, Nov. 11-12. Sec., Dr. Creighton Barker, 258 Church St., New Haven.

DELAWARE: *Examination.* Dover, Jan. 13-15. *Endorsement.* Dover, Jan. 20. Sec., Dr. J. S. McDaniel, 229 S. State St., Dover.

DISTRICT OF COLUMBIA: * *Endorsement.* Washington, Sept. 8. Sec., Commission on Licensure, Dr. G. C. Ruhland, 6012 Municipal Bldg., Washington.

FLORIDA: * *Examination.* Jacksonville, Nov. 25-26. Sec., Dr. Harold D. Van Schaick, 6675 Windsor Lane, La Gorce Island, Miami.

GEORGIA: Atlanta, Oct. 14-16. Sec., Mr. R. C. Coleman, 111 State Capitol, Atlanta 3.

IDAHO: Boise, Jan. 13-15. Sec., Miss Estella S. Mulliner, 355 State Capitol Bldg., Boise.

ILLINOIS: Chicago, Oct. 14-16. Supt. of Registration, Dept. of Registration and Education, Mr. Philip M. Harman, Springfield.

INDIANA: *Examination.* Indianapolis, June 1948. Sec., Board of Medical Registration and Examination, Dr. Paul R. Tindall, K of P Bldg., Indianapolis.

KANSAS: Topeka, Dec. 3-4. Sec., Board of Medical Registration and Examination, Dr. J. F. Hassig, 905 N. 7th St., Kansas City.

KENTUCKY: *Examination.* Louisville, Sept. 22-24. Sec., State Board of Health, Dr. P. E. Blackerby, 620 S. Third St., Louisville 2.

MAINE: Portland, Nov. 12-13. Sec., Dr. A. P. Leighton, 192 State Street, Portland.

MARYLAND: *Medical Examination.* Baltimore, Dec. 9-12. Sec., Dr. Lewis P. Gundry, 1215 Cathedral St., Baltimore. *Homeopathic Examination.* Baltimore, Dec. 9-10. Sec., Dr. J. A. Evans, 612 W. 40th St., Baltimore.

MASSACHUSETTS: *Examination.* Boston, Nov. 18-21. Sec., Dr. H. Q. Gallupe, 413-E State House, Boston.

MINNESOTA: * St. Paul, Sept. 3-5. Sec., Dr. J. F. DuBois, 230 Lowry Medical Arts Bldg., St. Paul.

MISSISSIPPI: *Endorsement.* Jackson, Dec. 1947. Asst. Sec., State Board of Health, Dr. R. N. Whitfield, Jackson.

MONTANA: Helena, Oct. 6-8. Sec., Dr. O. G. Klein, First National Bank Bldg., Helena.

NEVADA: Carson City, Nov. 3. Sec., Dr. G. H. Ross, 215 N. Carson St., Carson City.

NEW HAMPSHIRE: Concord, Sept. 11-12. Sec., Board of Registration in Medicine, Dr. John S. Wheeler, 107 State House, Concord.

NEW JERSEY: *Examination.* Trenton, Oct. 21-22. Sec., Dr. E. S. Hallinger, 28 W. State St., Trenton.

NEW MEXICO: * Santa Fe, Oct. 13-14. Sec., Dr. LeGrand Ward, 141 E. Palace Ave., Santa Fe.

NEW YORK: *Examination.* Albany, Buffalo, New York and Syracuse, Oct. 6-9, 1947. Sec., Dr. Jacob L. Lochner, Jr., Education Bldg., Albany.

NORTH DAKOTA: Grand Forks, Jan. 6-9. Sec., Dr. G. M. Williamson, 4½ S. Third St., Grand Forks.

OKLAHOMA: *Endorsement.* Oklahoma City, Oct. 28-29. Sec., Dr. F. Clinton Gallaher, 813 Braniff Bldg., Oklahoma City.

OREGON: * *Endorsement.* Portland, Oct. 17-18. Exec. Sec., Miss L. M. Conlee, 608 Failing Bldg., Portland.

PENNSYLVANIA: *Examination.* Harrisburg, Jan. 1948. Acting Sec., Board of Medical Education and Licensure, Mrs. M. G. Steiner, 351 Education Bldg., Harrisburg.

RHODE ISLAND: * *Examination.* Providence, Oct. 2-3. Chief, Division of Professional Regulation, 366 State Office Bldg., Providence.

SOUTH CAROLINA: Columbia, Nov. 10-12. Sec., Dr. N. B. Heyward, 1329 Blanding St., Columbia.

SOUTH DAKOTA: * Pierre, Jan. 20. Sec., State Board of Health, Dr. Gilbert Cottam, Capitol Bldg., Pierre.

TEXAS: San Antonio, Nov. 12-14, 1947. Sec., Dr. T. J. Crowe, 918-20 Texas Bank Bldg., Dallas 2.

UTAH: *Reciprocity.* Oct. 8. *Examination.* Salt Lake Ctiy, June, 1948. Asst. Dir., Department of Registration, Miss Rena B. Loomis, 324 State Capitol Bldg., Salt Lake City.

WEST VIRGINIA: *Examination.* Charleston, Oct. 2-4. Commissioner, Public Health Council, Dr. N. H. Dyer, State Capitol, Charleston.

WYOMING: *Examination.* Cheyenne, Oct. 6. Sec., Dr. G. M. Anderson, Capitol Bldg., Cheyenne.

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* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

ARIZONA: Sept. 16. Sec., Mr. Francis A. Roy, Science Hall, University of Arizona, Tucson.

ARKANSAS: *Examination.* Little Rock, Oct. 7. Sec., Mr. L. E. Gebauer, 701 Main St., Little Rock.

COLORADO: *Examination.* Denver, Sept. 17-18. Sec., Dr. Esther B. Starks, 1459 Ogden St., Denver.

DISTRICT OF COLUMBIA: *Examination.* Washington, Oct. 20-21. Sec., Commission on Licensure, Dr. G. C. Ruhland, 6012 E. Municipal Bldg., Washington.

FLORIDA: *Examination.* Gainesville, Nov. 1. Final date for filing application is Oct. 16. Sec., Dr. W. M. Emmell, University of Florida, Gainesville.

IOWA: Des Moines, Jan. 13, April 13, July 13, Oct. 12. Sec., Dr. Ben H. Peterson, Coe College, Cedar Rapids.

MICHIGAN: *Examination.* Ann Arbor and Detroit, Oct. 10-11. Sec., Miss Eloise LeBeau, 101 N. Walnut St., Lansing.

MINNESOTA: *Examination.* Minneapolis, Oct. 7-8. Sec., Dr. Raymond N. Bieter, 105 M. Hall, University of Minnesota, Minneapolis.

NEBRASKA: *Examination.* Omaha, Oct. 7-8. Dir., Bureau of Examining Boards, Mr. Oscar F. Humble, State Department of Health, Room 1009, State Capitol Bldg., Lincoln 9.

OKLAHOMA: Spring 1948. Sec., Dr. Frank Clinton Gallaher, 813 Braniff Bldg., Oklahoma City.

TENNESSEE: *Examination.* Memphis, Sept. 18-19. Sec., Dr. O. W. Hyman, 874 Union Ave., Memphis.

WISCONSIN: *Examination.* Madison, Sept. 27. Final date for filing application is Sept. 20. Sec., Mr. William H. Barber, Watson and Scott Sts., Ripon.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Food and Drug Acts: Application of Federal Act to Intrastate Sales.—The defendant, doing business as Sullivan's Pharmacy, was convicted of violating the Federal Food, Drug and Cosmetic Act and he appealed to the Circuit Court of Appeals, Fifth Circuit.

Between November 1943 and March 1944 Abbott Laboratories, doing business in North Chicago, Ill., shipped in interstate commerce to Abbott Laboratories, at Atlanta, Ga., a number of boxes containing bottles of drugs, one of them being a bottle of 1,000 tablets of sulfathiazole, which was duly labeled with a caution that they were to be used only by or on the prescription of a physician and with the name and Chicago address of Abbott Laboratories. This bottle was in September 1944, sold to Sullivan and by him transferred, in intrastate commerce, to his pharmacy in Columbus and placed on his shelves for retail sales to customers. In December two lots of twelve tablets each were taken from the bottle, placed in pasteboard pill boxes with only the word sulfathiazole (slightly misspelled) on them and sold to federal inspectors. The label on the bottle was not defaced or changed and the bottle was seen and afterward taken in charge by the inspectors.

The defendant contends that the Federal Food, Drug and Cosmetic Act was not intended to operate on retail sales over the counter after interstate commerce has ended, by one who was not the importer; that the language is not clear enough to make criminals of such sellers; and that if construed to apply to them the act is, to that extent, beyond the power of Congress.

The only interstate commerce here involved, said the court, is the transportation of bottles of drugs in boxes from Chicago to Atlanta at least nine months before the sales to the government inspectors. The boxes came to rest in Atlanta, were opened by the importer, Abbott Laboratories, and the bottles were put in their stock of drugs in Atlanta for sale. Over six months later Sullivan bought one bottle, which is conceded to have been duly labeled, and put it into his stock of drugs at Columbus for retail sales, where the bottle stayed for another three months before being broken open. If the criminal provisions relied on apply here, they apply to all intrastate sales of imported drugs after any number of intermediate sales within the state and after any lapse of time as well as to similar retail sales of foods, devices and cosmetics, for all these are equally covered by these provisions of the act. We are not able to conclude, said the court, that the act is to be so construed as to bring within these penal provisions most of the sales in all drugstores, beauty parlors, barber shops and retail grocery stores in the United States.

The general purpose of the act is declared in its simple title: "An Act to prohibit the movement in interstate commerce of adulterated and misbranded food, drugs, devices, cosmetics and for other purposes." Sullivan clearly did not receive in interstate commerce any misbranded drug, said the court, nor did he proffer delivery of any in interstate commerce. A moderately strict construction of this penal provision would confine it to shippers and importers in interstate commerce. Sullivan was a party to intrastate sales only. Section 301 (K), however, prohibits "the alteration, mutilation, destruction, obliteration or removal of the whole or any part of the labeling of, or the doing of any other act with respect to, a food, drug, device or cosmetic, if such act is done while such article is held for sale after shipment in interstate commerce and results in such article being misbranded." The labeling here was not removed or mutilated, but an act was done with respect to the drug, to wit, the removal of some of it from the labeled bottle and the placing of it in a box not sufficiently labeled under the act, after shipment in interstate commerce and while the drug was held for sale, so that this portion of the drug became misbranded. Therefore in their broadest possible sense these words may include what happened. But we are of opinion, concluded the court, that they ought not to be taken so broadly, but applied only to the holding for the first sale by the importer after interstate shipment. Since importation by merchants of all merchandise is for the very purpose of sale, the importation, as has always been held, remains incomplete till its purpose is thus realized. The words of subsection (k) "held for sale after shipment in interstate commerce" naturally refer to this first sale by the merchant importer. The attempt here made by the prosecution is to extend subsection (k) so as to make criminal all retail sales from the interstate package, though made clearly in intrastate commerce, unless the label on the interstate package which has been broken be reproduced on the retail package. We believe no grocer or druggist thus breaking an interstate package for a retail sale has understood this was necessary, and it is said this case is the first effort to apply the federal act in this way. If the "holding for sale" is held to refer to all would-be sellers, no matter where or when or in what quantities, of all foods and drugs and cosmetics which at some time had moved in interstate commerce, the field of enforcement of the act will be multiplied many times. The reason urged for so expanding it, the protection of ultimate consumers, only makes another difficulty; for while Congress may regulate interstate commerce to any extent and almost for any purpose it thinks proper, this extended application would be really a direct regulation for police purposes of what is plainly intrastate commerce, the peculiar province of the state.

Nor did the state of Georgia neglect her duty. Under the provisions of the dangerous drug act derivatives and compounds of sulfanilamide are regulated and it appears that Sullivan violated such act. It would seem that the federal inspectors should have reported such violations to the Georgia inspectors. It is probable that other states have similar laws, reducing the need for Congress to interfere thus in intrastate commerce, if it has the power.

In passing this act, Congress indicated that its main and direct concern was with "the movement in interstate commerce." Until that movement is complete and the importer has sold his original packages the state cannot interfere. Congress regulated what the Constitution directly authorizes. That is no indication of any intention to regulate intrastate commerce because of any burdensome effect on interstate commerce. It is a general rule of statutory construction that as between two possible interpretations of a statute, by one of which it would be unconstitutional and by the other valid, our plain duty is to adopt that which will save the act. Applying this doctrine, the Court of Appeals, instead of holding the pertinent provision of the act unconstitutional as being an invasion of state rights, held that the proper construction was to limit the application of section 301 (k) to the first sale by the importer after interstate commerce. Accordingly the judgment of conviction was reversed.—*Sullivan v. United States, 161 F. (2d) 629 (1947).*

Medical Motion Pictures

FILM REVIEWS

No Help Wanted. Produced in 1946 for the American Legion by the National Association of Mutual Casualty Companies. 16 mm., black and white sound, 750 feet (one reel). Showing time eighteen minutes. Procurable on loan from American Mutual Alliance, 919 North Michigan Avenue, Chicago 11.

This film tells the story of the problems faced by the disabled veteran of World War II in his effort to make a place for himself in American business and industry. It is intended to appeal to (1) employers, (2) the veterans themselves and (3) community conscious organizations. The picture is dedicated to the proposition that disabled veterans and others with physical handicaps are employable and that their employment is consistent with sound insurance principles.

As the picture opens, one senses a feeling of our tremendous postwar industrial economy. Men at work in radio shops, at the draftsman table and in the machine shop and laboratory views lead one to realize that we live in epochal times. Basket weaving days are over.

As the picture progresses "separation day" arrives, the "Purple Heart veteran" returns home and is introduced to a civilian job. Job analysis, plus proper placement, is the answer. Matching the man to the job is in keeping with the highest traditions of our great American industries. Industrial America, in peace as in war, continues to lead the world. The ever increasing tempo of American living is in the film. By the time the film ends, one is convinced that again Medicine has changed the outlook on life.

No Help Wanted is definitely geared for a wide and enthusiastic response.

The Advent of Anesthesia. 16 mm., black and white, sound, 325 feet (one reel). Showing time nine minutes. Photographed in 1933 in the "Ether Dome" of the Massachusetts General Hospital; reedited in 1946. Produced and Procurable from Mallinckrodt Chemical Works, St. Louis 7.

This interesting documentary film depicts in a dignified manner the first public demonstration of ether anesthesia on Oct. 16, 1846 by Dr. William T. G. Morton while Dr. John Collins Warren removed a tumor of the neck from Gilbert Abbot. The narrator gives due credit to the previous work of Dr. Crawford Long. The use of the original operating chair, a replica of the original ether inhaler, authentic costumes and accurate portrayal of the surgical technics of that period makes this a realistic film. The photography is excellent.

This film should be of value in the teaching of the history of medicine to undergraduate students. It would also be of interest to any group of physicians when brief historical films are desired. When a film is desired for presentation of medical subjects to lay groups, this production would have real value.

Craniotomy. Prepared in 1944 by Harold C. Voris, M.D., Loyola University Medical School. 16 mm., color, silent, 1,600 feet (four reels). Showing time sixty-five minutes. Procurable from Photographic Department, Loyola University Medical School, 706 South Wolcott Street, Chicago 12.

This film is entirely a technical film concerned with craniotomy by various technics. The first part deals with a routine exploration in a case of jacksonian epilepsy which unfortunately was negative. The two other sections of the film show the technic of what has been described as the Naffziger type bone flap, in which the scalp is first reflected and a bone and muscle flap are turned together. The exploration in this case was for an adamantinoma.

A third section of the film deals with a frontal exploration for removal of the roof of the orbit presumably for persistent exophthalmos. The technic would be of interest to medical students and perhaps to practitioners. It would not be of particular interest to neurologic surgeons. The photography is good.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1937 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied with stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Journal of Ophthalmology, Cincinnati

30:537-694 (May) 1947

Pigmented Tumors (the De Schweinitz Lecture). A. B. Reese.—p. 537.
Treatment of Retinitis Pigmentosa, with Special Reference to Filatov Method. D. M. Gordon.—p. 565.
Peripheral Visual Acuity: Special Reference to Scotopic Illumination. J. Mandelbaum and L. L. Sloan.—p. 581.
Effect of Electric Stimulation on Ocular Tension. P. B. Zaretskaya. —p. 589.
Ocular Manifestations of Mumps: Case of Mumps Keratitis. J. Fields. —p. 591.
Primary Glaucoma and Pituitary-Diencephalic System. H. Zondek and Gerda Wolfsohn.—p. 596.
Psychology of the Squinter. A. E. Stromberg.—p. 601.

American Journal of Public Health, New York

37:499-640 (May) 1947

Maternity and Child Welfare in Large British City. Jean M. Mackintosh.—p. 499.
Regulation of Housing: Hints for Health Officers. C. S. Ascher.—p. 507.
Ideal Intake of Calories and Specific Nutrients. F. J. Stare.—p. 515.
Effect of Restricted Feeding on Aging and Chronic Diseases in Rats and Dogs. C. M. McCay.—p. 521.
*Effect of Ultraviolet Irradiation of Classrooms on Spread of Measles in Large Rural Central Schools: Preliminary Report. J. E. Perkins, Anne M. Bahlke and Hilda F. Silverman.—p. 529.
Use of Census Tracts in Analysis of City Health Problems. H. W. Green.—p. 538.
Correlation of Laboratory and Clinical Evidence of Virulence of Corynebacterium Diphtheriae. M. Frobisher Jr., Elizabeth I. Parsons and Elaine Updyke.—p. 543.
*Present Recommendations Concerning Treatment and Prophylaxis of Diphtheria. F. H. Top.—p. 549.
Water Supply: Report of the Committee on Water Supply. C. R. Cox. —p. 555.
Epidemic of an Acute Meningoencephalitis in Giles County, Tennessee: Unusual Disease. W. C. Humbert, C. B. Tucker, K. T. Mosley and L. K. Bishop.—p. 564.

Effect of Ultraviolet Irradiation of Classrooms on Spread of Measles.—Perkins and his co-workers say that studies made in the past nine years in Philadelphia and its suburbs on the effect of ultraviolet irradiation of classrooms on the spread of measles, chickenpox and mumps in school children suggested that such irradiation has reduced the spread of these diseases, particularly measles, in the classrooms studied. Similar experiments have been undertaken in three rural centralized schools in upstate New York. Observations in these experiments did not begin until January 1945. An extensive measles epidemic in the winter of 1945-1946 makes this report possible. There were indications that ultraviolet lights in the classrooms modified the spread of measles in the classrooms. Further experimental investigation is needed.

Treatment and Prophylaxis of Diphtheria.—Top thinks that a progressive decline in diphtheria over the past two decades has had a lulling effect on some communities, with a resultant lukewarmness in diphtheria prevention. At present there is a reawakened interest in diphtheria, stimulated by a slight rise in case incidence. Antitoxin is the agent of choice in the treatment of diphtheria. Prognosis is directly proportional to the day of the disease on which antitoxin is first given, regardless of the type of organism encountered, though the gravis type of infection may be more refractory to treatment. Penicillin is not a substitute for antitoxin but under certain circumstances is an adjunct. Among antigens available for protection against diphtheria, A. P. T. is the agent of choice, given in two doses at intervals of one month to six weeks. In the presence of a declining case and carrier incidence, booster doses of antigen are necessary. Booster doses of A. P. T. are suggested at 2 years of age and again before entering school for the first time. Thereafter an unusual incidence of the disease in the community warrants one in adopting further antigenic stimulation, proceeding with caution and using plain toxoid after the age of 10 to 12 years.

American Journal of Tropical Medicine, Baltimore

27:245-416 (May) 1947. Partial Index

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27:1-128 (May) 1947 (Supplement)

Malaria and Other Insect-Borne Diseases in the South Pacific Campaign, 1942 to 1945: I. General Aspects and Control Measures. P. A. Harper, E. T. Lisansky and B. E. Sasse.—p. 1.
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Archives of Dermatology and Syphilology, Chicago

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Hyperkeratosis Penetrans: Report of Case of Probable Variant of Kyrle's Disease. H. L. Arnold Jr.—p. 633.
*Congenital Absence of the Valves in the Veins as a Cause of Varicosities. A. C. Curtis and R. W. Helms.—p. 639.
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Morbus Moniliformis Lichenoides: Variant Types. A. R. McFarland. —p. 674.
Clinical Experience with an Ointment of Synthetic Coal Tar. T. S. Saunders and W. C. Davis.—p. 683.
Acute Syphilitic Bilateral Total Ophthalmoplegia. A. C. Esposito.—p. 686.

Absence of Valves in Veins as Cause of Varicosities.—Observations of a youth aged 20 with swelling and ulcers of the right leg are illustrative of a congenital absence of valves in the veins of a large section of the venous bed surgically removed from the right inguinal region. The superficial epigastric and pudic branches on removal and inspection had no valves. The conus, which represents the end of the femoral vein, had no valves. The saphenous vein was double—a not uncommon finding. No valves were present in the upper part of its first section. In the upper part of the second section a small, nonfunctioning remnant was present. These congenital abnormalities of valves of the vein are probably only a part of a similar abnormality in other veins not removed. The abnormality could easily explain the presence of varicosities and ulcerations in this patient. Eger and Caser in 1943 maintained that congenital absence of valves in the external iliac and femoral veins might be an important factor in the production of varicose veins. Curtis and Helms think that too often preexisting thrombophlebitis is assumed to be the etiologic agent of varicose veins. Congenital absence of valves in the larger veins of the femoral and external iliac systems should be considered in young persons.

Archives of Internal Medicine, Chicago

79:475-588 (May) 1947

*Eruptive Fever with Involvement of Respiratory Tract, Conjunctivitis, Stomatitis and Balanitis: Acute Clinical Entity, Probably of Infectious Origin? Report of 20 Cases and Review of Literature. S. N. Soll.—p. 475.
Cirrhosis of Liver with Massive Hydrothorax. D. G. McKay, J. J. Sparling Jr. and S. L. Robbins.—p. 501.
*Stevens-Johnson Syndrome: Report of 9 Patients Treated with Sulfonamide Drugs or Penicillin. D. O. Wright, E. M. Gold and G. Jennings.—p. 510.
Pneumonia in Old Age: Active Immunization Against Pneumonia with Pneumococcus Polysaccharide: Results of a Six Year Study. P. Kaufman.—p. 518.
Primary Carcinoma of Liver: Study of 31 Cases. R. M. Hoyne.—p. 532.
Homologous Serum Hepatitis Following Transfusion. H. S. Ginsberg.—p. 555.
*Intratracheal Penicillin Therapy in Suppurative Bronchiectasis. L. E. Siltzbach.—p. 570.

Eruptive Fever with Involvement of Respiratory Tract, Conjunctivitis, Stomatitis and Balanitis.—This syndrome has been described under a variety of terms, such as eruptive fever with stomatitis and ophthalmia, erythema exudativum multiforme of Hebra, erythema or herpes iris conjunctivae, ectodermosis erosiva pluriorificialis and Stevens-Johnson syndrome. Soll reports observations on 20 cases which were observed in military personnel. The disease is acute, probably infectious, self limited and febrile. Prodromal symptoms in the respiratory tract are followed by lesions of the skin and mucous membrane of the mucocutaneous junctions characterized by vesicles and pseudomembranes and accompanied frequently with fever and occasionally with bronchopneumonia. As regards the pathogenesis, bacteriologic observations are of no significance. There is no evidence that ingestion of drugs is a factor. Because of the prodromes in the respiratory tract and generalized manifestations the disease is regarded as air borne, systemic and probably due to a virus. The various names proposed and used are misleading in that they direct attention almost exclusively to the skin. Erythema exudativum multiforme means little in cases in which dermatologic lesions do not occur. The term "erythema pluriorificialis exudativum" is better in that it refers also to the orifices of the body, but it is too long and has only descriptive meaning. Until the causative agent is found, appropriate naming of the disease will not be possible.

Stevens-Johnson Syndrome.—Wright and his associates point out that the syndrome described by Stevens and Johnson in 1922 was designated as a "new" eruptive fever associated with stomatitis, ophthalmia, cutaneous eruption and constitutional symptoms. The syndrome deserves emphasis because tragic complications of the eyes, consisting of corneal ulceration or panophthalmitis with partial or complete loss of vision, have been frequent. These severe complications of the eyes did not occur in 9 patients treated by the authors with sulfonamides and/or penicillin. Five patients were treated with sulfonamide drugs and 4 patients with penicillin systemically or topically or both. Complete recovery without sequelae occurred in all but 1 case, in which case a mild conjunctivitis developed with slight symblepharon but no corneal involvement. Enthusiasm for any type of therapy in this syndrome must be tempered by the fact that the severity of the clinical course varies greatly and that recovery without complications of the eyes is not uncommon. In 6 of the 9 cases at least one previous attack was experienced without permanent ocular damage.

Intratracheal Penicillin Therapy in Bronchiectasis.—According to Siltzbach the surgical removal of one or more lobes of the lungs is now the accepted treatment for chronic suppurative bronchiectasis. About half the patients with this ailment are unable to undergo operation because their lesions are too extensive or because they are poor surgical risks. In the treatment of 13 patients with chronic suppurative bronchiectasis and 1 patient with suppurative pneumonia, atelectasis and early bronchiectasis intratracheal instillations of penicillin were given. Ten of the 13 patients with chronic bronchiectasis had a drop of 50 per cent or more in the volume of sputum. Three patients had no significant reduction of sputum after the instillations. Recurrence of symptoms was experienced by 4 patients, with a favorable immediate response. Intratracheal penicillin therapy appears to be a useful adjunct in the preparation of patients for lobectomy. It reduces the volume of sputum, renders it less purulent and abolishes the odor. Some patients unsuitable for surgical intervention obtain fairly lasting ameliorative effects from the therapy. One patient with suppurative pneumonia and atelectasis of more than three months' duration experienced immediate and lasting clearing and reexpansion of two lobes after intratracheal instillation.

Archives of Ophthalmology, Chicago

37:561-700 (May) 1947

Intraocular Hemorrhage in Cataract Extraction. W. C. Owens and W. F. Hughes Jr.—p. 561.
*Effect of Training Methods on Color Vision. J. R. Gallagher, E. J. Ludvigh, S. F. Martin and Constance D. Gallagher.—p. 572.
Experimental Studies on Blood-Aqueous Barrier. F. W. Stocker.—p. 583.
Corneoscleral Suture in Operations for Cataract: Special Reference to Incidence of Postoperative Hyphemia. O. S. Lee Jr.—p. 591.
Danger of Penicillin Therapy in Active Uveitis. E. R. Yasuna.—p. 598.
Relative Deficiency of Parasympathomimetic Activity in Aqueous of Eyes with Chronic Simple Glaucoma. S. Bloomfield.—p. 608.
Sensorial Retinal Relationship in Concomitant Strabismus. H. M. Burian.—p. 618.
Hypovitaminosis A in Ophthalmology. R. L. Schmidtke.—p. 653.

Effect of Training on Color Vision.—According to Gallagher and his associates, from 6 to 8 per cent of males are unable to make the proper responses to color vision tests. Efforts have been made to improve the color vision of these subjects. It was believed that many applicants failed the tests because of color ignorance, a condition which would be more amenable to treatment than one attributable to a disorder of color perception. At a boys' preparatory school 701 students were given a color vision test with ten of the American Optical Company's Pseudo-Isochromatic Plates. Deficient color vision was found in 49 (6.9 per cent). These 49 subjects were given training on the test plates. Perfect responses were made after training on the American Optical Company test plates by 45 members of this group, but only 6 made perfect responses to all the plates in the very similar Ishihara test. The scores on a color desaturation test did not improve. A retest on the American Optical Company plates several months later showed considerable diminution in ability to make correct responses. Training apparently does not result in the development of the ability to differentiate colors in all situations and under all conditions with the accuracy and speed possessed by those who have normal color vision.

Archives of Otolaryngology, Chicago

45:503-612 (May) 1947

Streptomycin in Surgical Infections: III. Otitis Externa, Otitis Media, Mastoiditis, Brain Abscess and Meningitis. E. J. Pulaski and C. S. Matthews.—p. 503.
Evaluation of Diagnostic Methods Used in Cases of Maxillary Sinusitis, with a Comparative Study of Recent Therapeutic Agents Employed Locally. S. Burtoff.—p. 516.
Laryngeal Chondroma. R. S. Rosedale.—p. 543.
*Discovery and Evaluation of Otic Cripples. E. P. Fowler Jr.—p. 550.
Unique Case of Foreign Body in Esophagus. V. J. Schwartz.—p. 562.
Operation to Improve Hearing in Cases of Congenital Atresia of External Auditory Meatus. G. L. Pattee.—p. 568.
Otitis Media and Complications. B. R. Dysart.—p. 594.

Discovery and Evaluation of Otic Cripples.—According to Fowler, the deaf and hard of hearing are ignored as compared with other types of cripples. The handicap from blindness or from poliomyelitis is obvious; that from deafness is not. Failure to do tests or the use of antiquated methods has clouded the problem of deafness. The most serious obstacle to the establishment of routine audiometric methods for the screening and measurement of deafness and the establishment of proper standards of compensation has been the insistence of badly informed persons that the old fashioned voice and whisper tests are adequate. This has been the trouble not only in the army, the navy and the air force but also in most schools and in medicolegal courts. The audiometer has come to be recognized among experts as the most reliable standard for testing hearing.

Fowler evaluates the use of phonograph audiometers, the screening tests for groups, pure tone audiometry, pure tone bone conduction tests and fatigue tests. Spot surveys with the audiometer have indicated that half of the 140,000,000 people in the United States have some impairment of hearing.

Arizona Medicine, Phoenix

4:73-172 (March) 1947

Newer Aspects of Pancreatic Disease. F Cunha—p. 97.
Modern Management of Edema. I. P. Stevenson—p. 105.
Thrombocytopenia with Splenectomy: Case Report. T. W. Woodman and F. J. Milloy.—p. 114.
The Peptic Ulcer Problem. C. F. Dixon—p. 117.
Thrombosis and the Anticoagulants. O. O Meyer—p. 120.
H. Influenzae Meningitis, with Report of Incidence in a Newborn with Recovery. M. C. F. Semoff.—p. 125.
Precancerous Dermatoses. L. G. Jekel.—p. 127.
Studies on Effect of Diluting Fluids on Serologic Titers: II. Comparison of the Titers Obtained When Serums Are Diluted Prior to Inactivation and When They Are Diluted After Inactivation. E. L. Breazeale, T. R. Reusser and L. F. Pierce.—p. 129.

Blood, New York

2:217-310 (May) 1947

*Association of the Guillain-Barré Syndrome with Infectious Mononucleosis: Report of 2 Fatal Cases. W Ricker, A. Blumberg, C. H. Peters and A. Widerman.—p. 217.
Chronic Neutropenia: Report of Case Not Cured by Splenectomy. P. G. Hattersley.—p. 227.
*Studies on Physiology of the White Blood Cell: Glycogen Content of Leukocytes in Leukemia and Polycythemia. R Wagner.—p. 235.
Observations on Anemia in Ducks Infected with P. Lophurae. R. H. Rigdon and H. H. Rostorfer.—p. 244.
Dietary Factors Concerned in Erythropoiesis. G. E. Cartwright.—p. 256.

Guillain-Barré Syndrome with Infectious Mononucleosis.—Infectious mononucleosis in which death was due to associated ascending paralysis, indistinguishable from that in the Guillain-Barré syndrome, was encountered by Ricker and his associates in 2 cases at the Army Institute of Pathology. Study of the data from these cases strongly suggests that infectious mononucleosis is one of the many diseases or agents which may precipitate or give rise to the Guillain-Barré syndrome.

Glycogen Content of Leukocytes in Leukemia and Polycythemia.—Wagner reported in a previous paper a procedure for determining glycogen in whole blood and isolated white cells. He applied the method to the study of the glycogen content of whole blood and white blood cells in leukemia and polycythemia. It is concluded from this study that the granulated leukocyte is the only carrier of glycogen in whole blood. The "reducing substances" in lymphocytes and blast cells are not considered to be true glycogen. The glycogen content of wet white blood cells in the rabbit amounts to about 1 per cent. In the human being a range of from 0.17 to 0.67 per cent was calculated. In disease higher percentages occur, in polycythemia up to 1.64 per cent and in glycogen storage disease up to 3.05 per cent.

Bulletin of Johns Hopkins Hospital, Baltimore

80:181-216 (April) 1947

Pulmonary Edema and Pleural Effusion Produced by Acute Alpha-Naphthyl Thiourea Poisoning in Rats and Dogs. H. Latta.—p. 181.
Penile Ulcer Caused by Micrococcus Tetragenus. B. D. Pinck and B. Zheutlin.—p. 198.

Bulletin of New York Acad. of Medicine, New York

23:245-306 (May) 1947

Role of the Academy in the City and Nation. G. Baehr.—p. 245.
Recent Studies on Function of Adrenal Cortex. C. N. H. Long.—p. 260.
Diagnosis and Treatment of Congenital Cyanotic Heart Disease. G. H. Humphreys II.—p. 283.
Studies in New Anticonvulsants. H. H. Merritt and C. Brenner.—p. 292.
Intrinsic Asthma. F. M. Rackemann.—p. 302.

23:307-380 (June) 1947

Social Pathology and New Era in Medicine. J. A. Ryle.—p. 312.
*Carcinoma of Lung: Six Year Study. G. H. Humphreys II.—p. 330.
*Rickettsialpox. M. Greenberg and O. Pellitteri.—p. 338.
Plato and Clementine. H. W. Smith.—p. 352.

Carcinoma of Lung.—Humphreys reports 125 cases of primary bronchogenic carcinoma in 109 men and 16 women between the ages of 34 and 79 admitted to a general hospital service over a six year period. In 83 of the patients diagnosis was made either at necropsy or so late in the course of the disease that no operation was considered justifiable. Of the 42 patients operated on, it was possible to carry out some form of resection in 29. Nine of these died in the postoperative period, a hospital mortality of 31 per cent. Only 3 of the 20 patients surviving resection remained alive without evidence of metastasis, but the lives of those who died of metastasis were prolonged and their symptoms were alleviated. Radiation therapy has not increased the life expectancy of 33 patients treated as compared to those untreated, but in many it has relieved symptoms and in some it has probably prolonged life. Three patients are living and apparently well without physical or economic disability three to four years after pneumonectomy. Early recognition aided by bronchoscopy is the key to successful surgical treatment.

Rickettsialpox.—According to Greenberg and Pellitteri, rickettsialpox is a new disease caused by a heretofore undescribed rickettsia. The clinical characteristic is the occurrence of a triad consisting of an initial lesion, a small papule somewhere on the body, usually without symptoms, followed about a week later by the acute onset of fever, headache, chills, sweats and backache, and thereafter by the occurrence of a papulovesicular rash two to three days after the onset of fever. The duration of illness from the onset of the initial lesion is about three to four weeks. During the acute illness there is a moderate leukopenia, and the sedimentation rate is either normal or slightly elevated. The serums of recovered patients give negative agglutination reactions with Bacillus proteus OX 19, OX 2 and OX K and give positive complement fixation tests for rickettsialpox, using the M. K. strain as antigen. The causative agent of the disease is Rickettsia akari and the vector is a rodent mite, Allodermanyssus sanguineus. There were no fatalities from the disease.

Canadian Medical Association Journal, Montreal

56:595-708 (June) 1947

*Globin Insulin. I. M. Rabinowitch, A. F. Fowler, E. H. Bensley, A. L. Gordon and Marjorie Mountford.—p. 595.
Use of Latin and Metric System in Prescription Writing. R. A. Waud.—p. 605.
*Development of Anastomosis Between Coronary Vessels and a Transplanted Internal Mammary Artery. A. M. Vineberg and Beverly L. Jewett.—p. 609.
Malignant Lymphoma: Cutaneous Symptomatology. D. E. H. Cleveland.—p. 614.
Treatment Based on Diagnosis During Menopause. M. C. Watson.—p. 621.
Practical Guiding Principles for Closed Pneumonolysis. G. A. P. Hurley.—p. 625.
Effects of Galvanic Stimulation on Limb Volume in Nerve Injuries. J. E. Bateman.—p. 627.
Intestinal Parasites Found in Survey of Repatriated Hongkong B. O. W. T. H. Williams.—p. 630.
Pleural Effusions and Tuberculosis. J. F. Paterson.—p. 634.
Social Therapy of Epilepsy. W. G. Lennox.—p. 638.
Cultural Study of Ringworm. C. W. E. Danby and R. Forsey.—p. 641.
Aerosol Therapy. M. Aronovitch.—p. 643.
Challenge of the Young Child. D. V. Hutton.—p. 646.
Fallacies and Control of Respiratory Infections, with Special Emphasis on Influenza. F. S. Brien.—p. 650.
Nonrenal Hypertension. S. M. Friedman and Constance L. Friedman.—p. 655.

Globin Insulin.—According to Rabinowitch and his associates the action of globin insulin is slower than that of unmodified insulin but is more rapid than that of protamine zinc insulin. Acting more rapidly than protamine zinc insulin, it should more effectively control the hyperglycemic response to the ingestion of food. The use of globin insulin in the morning and protamine zinc insulin in the evening appeared to result in a better average control of diabetes than any of the other methods of treatment. The addition of globin insulin to the available insulins for the treatment of diabetes mellitus is fully justified.

Anastomosis Between Coronary Vessels and Internal Mammary Artery.—Beck in 1935 attempted to improve the circulation of the left ventricle by suturing a muscle graft to the surface of the heart. In 1937 O'Shaughnessy tried to bring arterial blood to the left ventricle by suturing the omentum to the ventricular muscle. Fauteux introduced ligation of the vena magna cordis in 1940. In 1946 Vineberg described an anastomosis between the left internal mammary artery and the left coronary circulation in a dog ninety-nine days after transplantation of the left internal mammary artery into the wall of the left ventricle. Vineberg and Jewett report observations on 10 dogs of which 2 showed a definite communication between the left internal mammary artery and the left coronary circulation. In 8 of the 10 animals the internal mammary artery became partially adherent to the chest wall in its former bed. Distal to this the artery was free for a distance before entering the heart. A constricting scar developed at the junction between the free arterial portion and that part of the artery which readhered to the chest wall. The artery was patent throughout in 5 animals and was patent to the site of the scar and beyond it in 2 animals. In 3 dogs it was patent to the site of the scar but thrombosed beyond it. Work is now in progress to attempt to diminish the frequency of this scar formation.

Cincinnati Journal of Medicine

28:301-386 (May) 1947

*Triweekly Arsenotherapy, a Safe and Effective Ambulatory Treatment Regimen for Early Syphilis. A. L. Weiner.—p. 301.
*Toxic Reactions of Penicillin. E. D. Davis.—p. 321.

28:387-452 (June) 1947

The Nature and Treatment of Arterial Hypertension. I. H. Page.—p. 387.
Cutaneous and Subcutaneous Hemorrhage Simulating Melanoma. L. Goldman.—p. 398.

Triweekly Arsenotherapy for Early Syphilis.—Weiner says that a triweekly method has been employed in the venereal disease clinic of the Cincinnati General Hospital and the Health Center Clinic of the Cincinnati Health Department during the past three years. A total of forty injections of the arsenical and ten injections of bismuth subsalicylate constituted the treatment. The arsenical drug (mostly mapharsen) was given in full dosage of 1 mg. per kilogram of body weight—usually 0.04 to 0.06 Gm.—three times a week for thirteen and one-half weeks, and bismuth subsalicylate in dosage of 1 cc. was given once a week during the first ten weeks. A total of 714 patients have been treated in this manner. Follow-up of these patients indicates that this regimen is safe and effective in primary, secondary and early latent syphilis. This treatment schedule is suggested as a practical office procedure. Penicillin in oil and beeswax alone or in combinations with arsenic and bismuth cannot as yet be recommended for routine use in the treatment of early syphilis.

Toxic Reactions of Penicillin.—Davis has observed several cases of unusually severe and prolonged urticaria occurring in patients undergoing penicillin therapy. Two case histories are presented to illustrate this allergic manifestation. Apparently certain individuals are capable of developing a sensitivity to penicillin either by previous fungous disease or by being in constant contact with the penicillium mold. Penicillin today is used intravenously, intramuscularly, topically (as a powder), locally as an ointment, orally, internally in serous cavities, as an irrigating agent, as an aerosol spray, as rectal suppositories, as an ingredient for vaginal douches and as "cough drops" or lozenges. Since reactions have been known to occur during the past four years when penicillin was in its infancy, we can logically expect more and varied reactions with its wholesale use in the future. Pharmaceutical houses are at present striving to produce penicillin in its purest form. The comparatively low number of reactions occurring during the last quarter of the year suggests that a more highly purified product is now available for use.

Connecticut State Medical Journal, Hartford

11:321-424 (May) 1947

Medicine and National Security. E. L. Bortz.—p 324.
Pulmonary Sarcoidosis. H. L. Higgins.—p. 330.
Ragweed Pollen Survey in Connecticut. S. W. Jennes.—p. 339.
Connecticut Cancer Record Registry—How It Functions. M. H. Griswold and Eleanor J. MacDonald.—p. 344.
Contribution of Yale University School of Medicine to Connecticut Cancer Program. Mary C. MacDonald.—p. 347.
Use of Glass Button in Treatment of Ascites A. Hurwitz.—p. 351.
Intern Teaching Program in Small Hospital. J. I. Epstein.—p. 353.
Scarlet Fever Immunizations. C. G. Thompson —p. 355.
"I Swear by Apollo the Physician." P. R. Hawley.—p. 356.

Florida Medical Association Journal, Jacksonville

33:599-660 (May) 1947

Surgical Lesions of Neck: Aspects of Their Diagnosis and Management. A. C. Williams.—p. 631.
Preliminary Review of Poliomyelitis in Florida. E. G. Riley.—p. 639.
Indications for Tracheotomy. T. M. Irwin.—p. 642.

33:664-738 (June) 1947

President's Address. S. Richardson.—p. 664.
Proceedings of Seventy-Third Annual Meeting of the Florida Medical Association, Held at Miami, April 21, 22 and 23, 1947.—p. 694.

Geriatrics, Minneapolis

2:137-194 (May-June) 1947

Acute Myocardial Infarction. M. D. Altschule.—p. 137.
Diet for the Aged. J. Meyer.—p. 149.
Clinical Differentiation of Senile and Arteriosclerotic Psychoses. D. Rothschild.—p. 155.
*Future of Older Worker. T. Klumpp.—p. 165.
Nitrogen Balance Studies in Elderly People. W. B. Kountz, Lilli Hofstatter and P. Ackermann.—p. 173.
Counseling the Aged. C. deGruchy.—p. 183.

Future of Older Worker.—Klumpp thinks that society has been quite illogical in its attitude toward the older worker. There seems to be no objection to electing and appointing older persons to positions of the greatest responsibility, and yet as far as the rank and file of workers is concerned we have no objection to the imposition of blind and unselective retirement rules. Some persons welcome retirement, and the possibility of retirement on a pension should remain open for these. However, if the premise is that all persons over 65 or 70 are not worth their keep, then least of all should we permit persons above that age to occupy the top and critical positions. Among the principles that should guide the attitude toward the older worker the author mentions the following: Since hiring is selective and based on fitness to do a given job, retirement should likewise be selective and based on unfitness. Since physiologic age is not synonymous with chronologic age, compulsory retirement on a calender age basis should be abandoned. In accord with Carlson's idea, if wage in proportion to performance is recognized as a fundamental principle, the older worker should taper off in industry, just as the young apprentice gradually works himself up in skill and remuneration. If this becomes general practice, the aura of foolish pride which now stands in the way would soon disappear.

Illinois Medical Journal, Chicago

91:217-276 (May) 1947

Carcinoma of Colon. W. H. Cole.—p. 229.
Contributions of Urology to Public Health. H. L. Kretschmer.—p. 239.
Cataract Extraction by the Vacuum Method. O. B. Nugent.—p. 243.
Protein Deficiency: Manifestations, Recognition and Management. W. S. Hoffman.—p. 248.
Meeting Emergency Situation in Epidemic of Diarrhea and Enteritis of the Newborn. E. V. Thieoff.—p. 254.

91:277-330 (June) 1947

Current Progress of Medicine. R. S. Berghoff.—p. 289.
Electric Shock Therapy in Office, Home and General Hospital. S. H. Kraines.—p. 291.
Cryptorchidism: Problem in Surgical Treatment. J. H. Kiefer.—p. 297.
Low Back Pain. S. L. Turck.—p. 300.
Frequently Encountered Heart Conditions. I. Treiger.—p. 303.
Thromboembolic Disease and Pregnancy. F. J. Walsh and A. M. Barone.—p. 305.
Treatment of Neurologic Disorders with Tridione. E. Liebert.—p. 311.
Acute Sinusitis in Children. G. J. Greenwood.—p. 313.
*Is Chemically Preserved Plasma Safe? A Warning! W. D. McNally.—p. 318.

Chemically Preserved Plasma.—McNally points out that most of the plasma in use at present is army and navy surplus plasma furnished by the American Red Cross. This blood plasma contains an antiseptic preservative, which is merphenyl-mercuric borate, N. N. R. This antiseptic contains 59.09 per cent of mercury. The proportion of this organic mercurial is 1 part to 50,000 plasma. This would correspond to 0.309 grain of merphenyl-mercuric borate in 1 unit of 500 cc., or 0.18 grain of mercury. Few physicians and surgeons know that this plasma contains mercury. When the patient is known to have nephritis, not over 2,000 cc. should be given, and in most serious cases without kidney damage 4,000 cc. should not be exceeded. In patients with jaundice or recently jaundiced or with cirrhosis of the liver, plasma should not be used in excess of 2,000 cc. McNally cites reports on the problem of mercurial poisoning. Blood plasma preserved with merphenyl-mercuric borate 1:50,000 is safe for patients without nephritis in the amount usually administered.

Indiana State Medical Assn. Journal, Indianapolis

40:395-490 (May) 1947

Outline for Study of Strabismus Cases. Mary Alice Norris.—p. 419.
Report on Industrial Ophthalmology in Evansville, Indiana. W. M. Cockrum, and H. C. Slaughter.—p. 422.
Role of Contact Lens in Conservation of Vision. H. F. Sudranski. —p. 426.
Acute Iritis, including Acute Iridocyclitis and Acute Uveitis. B. N. Lingeman.—p. 428.
Use of Penicillin Locally in the Eye. M. F. Miller.—p. 430.
Treatment of Chronic Suppurative Otitis Media. F. L. Dietl.—p. 434.

40:491-602 (June) 1947

*Atomic Bomb Surface Burns: Clinical Observations Among Prisoners of War Rescued at Nagasaki, Kyushu. J. S. P. Beck and W. A. Meissner.—p. 515.
One Stage Resection of Left Colon Lesions without Colostomy. K. A. Meyer and D. D. Kozoll.—p. 521.
Occupational Adjustment of Psychoneurotic Veterans. H. A. Steller. —p. 525.
Case of Glomus Tumor. V. F. Tremor.—p. 528.
Electrocardiographic Diagnosis and Prognosis of Recent Coronary Thrombosis or Occlusion. H. N. Middleton.—p. 529.

Atomic Bomb Surface Burns.—Beck and Meissner report observations on 9 Javanese who were among the prisoners of war rescued at Nagasaki. Rays from the activated atomic bomb had produced first, second and third degree thermal burns of the skin. The distribution of the burns was influenced by the position of the body and the wearing apparel of the victim at the time of exposure. It was near the noon hour on a summer day. The men were sweaty and wore as little clothing as possible; 6 men were shirtless; 2 had reduced their trousers to shorts. The body surfaces receiving the rays at right angles were more deeply burned than those receiving them obliquely. A man who had stood in such a position as to have received third degree burns on the summits of his shoulders would show second degree burns on the receding slopes of the chest and arms. The skin lesions had the appearance of ordinary third and second degree thermal burns. The parts of the body covered by the clothing were protected except for small flame-shaped zones of second degree burns. Various explanations have been given to account for these burns, but the most logical one is that the clothing, dampened with perspiration, stuck to the skin at these zones and they were burned because the insulating layer of air between the skin and the fabric was absent. Long thick hair protected the scalp, but the short hair did not protect the temples or less hairy portions of the face. There was no hematologic evidence of injury to the blood forming tissues in these patients.

Journal of Clinical Endocrinology, Springfield, Ill.

7:79-170 (Feb.) 1947

Excretion of Glycogenic Corticoids and of 17-Ketosteroids in Various Endocrine and Other Disorders. E. H. Venning and J. S. L. Browne. —p. 79.
Hyperophthalmopathic Syndrome in Thyroid Disease. K. E. Paschkis and A. Cantarow.—p. 102.
Virilizing Ovarian Tumors. J. Pedersen.—p. 115.
Hypogonadotropic Eunuchoidism: Report of Case with Failure to Respond to Chorionic Gonadotropic Hormone Due to Antihormones. A. Segaloff and W. Parson.—p. 130.
*Addison's Disease Followed for Nine Years: Case Report, with Autopsy. R. C. Moehlig.—p. 134.
Coexisting Myxedema and Hyperparathyroidism: Case Report. M. Kissin and H. Bakst.—p. 152.
Hyperemia AZT and Evaluation of Hyperemia Rat Unit of Chorionic Gonadotropin. B. Zondek and F. Sulman.—p. 159.

Addison's Disease Followed for Nine Years.—Moehlig reports that a man aged 41, who had been followed for nine years and who had had symptoms of Addison's disease for ten years, had been treated with aqueous adrenal cortex extract, vitamin C, salt, implantation of 1,575 mg. of desoxycorticosterone acetate pellets and intramuscular injections of this substance as well as by sublingual administration. The last mentioned method resulted in swelling of the salivary glands and salivation. A change in pigmentation, previously unnoticed, occurred within six months after treatment with adrenal cortex extract and salt. Over a period of nine years there was considerable loss of pigment. It is not asserted that treatment was responsible for this loss of pigment. Several episodes of addisonian crisis occurred, requiring a stepping up of treatment dosage. Failure to take treatment for two weeks resulted in an addisonian crisis from which the patient did not recover. Death was preceded by delirium, fever and hypoglycemia (blood sugar 32 mg.). At necropsy no adrenal tissue was found anywhere! It was suggested that, as a maternal aunt had died of Addison's disease (verified at necropsy) and a niece was developing pigmentation, an adrenal anlage defect was postulated. The changes found at necropsy in the pituitary, thyroid and other organs are recorded.

Journal of Immunology, Baltimore

56:1-96 (May) 1947

Appearance of Sheep Cell Lysins and Human A Cell Agglutinins in Rabbit Immunized with Partially Purified Blood Group A-Specific Substance from Hog Gastric Mucin. D. H. Brown, E. L. Bennett and C. Niemann.—p. 1.
Bacterial Warfare: Critical Analysis of Available Agents, Their Possible Military Applications, and Means for Protection Against Them. T. Rosebury and E. A. Kabat.—p. 7.

Journal Industrial Hygiene & Toxicology, Baltimore

29:145-200 (May) 1947

*Lung Changes Associated with the Manufacture of Alumina Abrasives. C. G. Shaver and A. R. Riddell.—p. 145.
Experiences with Polarographic Methods in Controlling Lead Hazard in Brass Foundries. H. J. Weber.—p. 158.
Simultaneous Determination of Lead and Zinc in Atmospheric Samples: A Polarographic Method Utilizing Double Internal Standard. A. S. Landry.—p. 168.
*Cryolite as a Detoxifying Agent for Lead Arsenate on Plants and Animals. S. Marcovitch.—p. 175.
A Comparative Study of the Lead Content of Street Dirts in New York City in 1924 and 1934. S. Kaye and P. Reznikoff.—p. 178.
Effect of Protein and Carbohydrate Intake on Liver Injury Produced in Dogs by Carbon Tetrachloride. V. A. Drill, T. A. Loomis and J. Belford.—p. 180.
Acute and Chronic Toxicity of Methyl Chloride: Hematology and Biochemical Studies. W. W. Smith.—p. 185.
Acute Toxicity and General Systemic Actions of Diethylene Glycol Monoethyl Ether (Carbitol). P. J. Hanzlik, F. P. Luduena, W. S. Lawrence and H. Hanzlik.—p. 190.
Radioactive Emanations: Nature, Mechanism of Action, Biologic Effects and Tolerance Limits. B. N. Craver.—p. 196.

Lung Changes Associated with Manufacture of Alumina Abrasives.—The disease described by Shaver and Riddell was first observed by Shaver in a young man who had been employed for eight years manufacturing an abrasive the main ingredient of which is bauxite. His chest roentgenogram disclosed a peculiar type of shadow together with a pneumothorax which had developed spontaneously. The x-ray appearances did not conform to the shadow patterns associated with lung fibrosis. When similar cases appeared, the process was investigated and 344 persons who had been exposed were investigated. Thirty-five of these had radiologic evidences of disease, and there were 13 others with lung changes classified as doubtful. The disease has been fatal in 7 instances. In several it has progressed rapidly and has produced serious disability. The cases reported by the authors apparently developed during the period when the process was accelerated for war production and the exposure increased. Cases observed in Germany seem to have occurred under similar circumstances of increased production. The disease is essentially an interstitial lung fibrosis, non-nodular in type. It may be rapidly progressive. Profound emphysema accompanies the invading fibrosis. Emphysematous blebs and bullae occur on the visceral pleura. These are apt to rupture spontaneously and give rise to pneumothorax. The etiology is doubtful, but it is known that the process involves exposure to high concentrations of alumina and silica, both in a very fine state of division, and to small quantities of many other substances.

Cryolite as Detoxifying Agent for Lead Arsenate on Plants and Animals.—Lead arsenate when used extensively, as in the Northwest apple belt, produces soil poisoning. As much as 180 pounds of lead arsenate per acre may be applied in a single season, or 1,800 pounds in a ten year period. In that area cryolite also is used on apples especially in the later sprays. Lead arsenate is known to accumulate in the soil sufficiently to interfere with crop growth. The addition of cryolite at the rate of 5,000 parts per million prevented the death of white rats when fed a diet in which 2,500 parts per million of lead arsenate was incorporated. When added to soil cryolite likewise warded off the injurious effects on beans of lead arsenate additions.

Journal of Investigative Dermatology, Baltimore

8:227-274 (May) 1947

Propylene Glycol Dipropionate (New Fungicide): Preliminary Report. E. S. Bereston.—p. 227.
Use of Hormones in Dermatology. M. M. Hartman.—p. 229.
*Treatment of Dermatitis Venenata (Rhus) by Cryotherapy: Preliminary Report. M. M. Robinson.—p. 239.
Effect of Hormones on Growth of Trichophyton Purpureum and Trichophyton Gypseum. F. Reiss.—p. 245.
Effect of Sex Hormones on Experimental Trichophyton Purpureum Infection in Rabbits. F. Reiss.—p. 251.
Local Sensitization of Skin to Grenz Rays by Bergamot Oil. M. Oppenheim.—p. 255.
"Compound" and Grouped Hairs of Human Scalp: Their Possible Connection with Follicular Infections. L. J. A. Loewenthal.—p. 263.

Cryotherapy for Dermatitis Venenata (Rhus).—Robinson employed refrigerants in the treatment of 101 persons who had dermatitis venenata caused by contact with plants of the Rhus family. One of these patients was treated with liquid air, 4 with solidified carbon dioxide and 96 by spraying with ethyl chloride. Liquid air produces faster results, but the handling of this substance is so difficult that its substitution for ethyl chloride is not warranted. Carbon dioxide was not quite as effective as liquid air, and its action was a little more difficult to control. Ethyl chloride produced good results without untoward side effects. Patients in whom the eruption was in the vesicular stage or in the early papular stage were treated. Severity of the cases varied from an isolated patch of vesicles on the arm or leg to the generalized form which is accompanied by fever. The vesicles dried up, the areas exfoliated and the skin healed in a relatively short time. In the majority the average duration of the disease was five days and the average number of treatments was three at twenty-four hour intervals. The extremely mild cases were often cured with one or two sprayings. Failure occurred in only 5 cases. It is suggested that frosting of the skin produces ischemia of the affected area and causes rupture of the vesicular wall with discharge of its contents. Results seem to indicate that this method of treatment may have a diversified use in vesicular dermatosis.

Journal of the Mount Sinai Hospital, New York

14:1-70 (May-June) 1947

*Evaluation of Dietary Factors in Treatment of Laënnec's Cirrhosis of Liver. A. J. Patek Jr.—p. 1.
Acute Coronary Insufficiency: An Entity. Shock, Hemorrhage and Pulmonary Embolism as Factors in Its Production. A. M. Master, S. Dack, A. Grishman, L. E. Field and H. Horn.—p. 8.
Radiation Therapy in Early Laryngeal Cancer. R. Kramer.—p. 24.
Infundibuloma: Case Report, with Review of Literature. B. D. Fine and A. I. Goldfarb.—p. 29.
Usefulness and Limitations of Laboratory Studies in Diagnosis of Virus Diseases. A. L. Florman.—p. 39.
Comparison of Pneumoencephalography and Electroencephalography in Brain Tumors. B. Schlesinger and H. Strauss.—p. 47.
"Benign" (Idiopathic) Bronchial Bleeding: Report of Case. A. R. Sohval.—p. 51.

Dietary Factors in Cirrhosis of Liver.—In the last ten years 124 patients with cirrhosis of the liver have been treated at the research service of the Goldwater Memorial Hospital. They were given a highly nutritious diet supplemented with brewers' yeast and intramuscular injections of liver extract and thiamine hydrochloride. The diet consisted of meat and dairy foods, fruit and green vegetables. Meat was served twice and milk five times daily—three times with meals and twice in the form of milk nogs containing the yeast powder. The average diet contained 3,591 calories. The patients did well on this regimen. It generally required at least two months of treatment before significant changes appeared. Comparison was made with a series of 386 hospitalized patients with liver cirrhosis who entered five New York hospitals during the years 1920 to 1930. These patients received either no specific dietary care or they received the high carbohydrate, low protein diet which was standard treatment at the time. At the end of one year 40 per cent of the controls were alive, in contrast to 65 per cent of the treated series; at the end of five years 7 per cent of the controls and 30 per cent of the treated series were alive. Patek concludes that it is no longer justified to accept cirrhosis of the liver as a disease with a relentless downhill course. A significant number of patients with severe liver failure and a much larger percentage of patients with moderate liver damage can recover with dietary treatment.

Journal of Nat. Cancer Inst., Washington, D. C.

7:183-298 (Feb.) 1947. **Partial Index**

Segregation Mammary Cancer to No Mammary Cancer in the Marsh Albino Strain of Mice. W. S. Murray and S. G. Warner.—p. 183.
*Trypanosoma Cruzi in Treatment of Mouse Tumors. T. Hauschka, L. H. Saxe Jr. and Margaret Blair.—p. 189.
Effect of Diets Deficient in Certain Amino Acids on the Induction of Leukemia in dba Mice. J. White, Florence R. White and G. B. Mider.—p. 199.
Absence of Effect of Urethane on the Latent Period of Tumors Induced with Subcutaneous Injections of the Agent of Chicken Tumor I. W. R. Bryan, V. T. Riley and Dorothy Calnan.—p. 203.
Development of Sarcoma at Site of Serial Transplantation of Pulmonary Tumors in Inbred Mice. H. L. Stewart, H. G. Grady and H. B. Andervont.—p. 207.
Tumors of Alimentary Tract Induced in Mice by Feeding Olive Oil Emulsions Containing Carcinogenic Hydrocarbons. E. Lorenz and H. L. Stewart.—p. 227.
Enzymatic Desamidation of Glutamine in Presence of Pyruvate Furnished by Concomitant Reactions. J. M. Gonçalves and J. P. Greenstein.—p. 269.
Mast Cell Neoplasia in Mice. Margaret K. Deringer and Thelma B. Dunn.—p. 289.

Trypanosoma Cruzi in Treatment of Mouse Tumors.—Hauschka and his co-workers observed that infections with Trypanosoma cruzi (Brazil strain) significantly retarded the growth of squamous epithelial carcinoma 119 in A mice, mammary adenocarcinoma in C3H mice and sarcoma 37 in white mice of unknown genetic background. Spontaneous breast adenocarcinoma in C3H mice was lightly retarded in growth. The infection was more virulent in A than in C3H mice. The inhibitory effect appears to be nonspecific, since it was frequently accompanied with loss in body weight and parasitemia of vital organs such as heart, lungs and intestine. Cancer cells were rarely parasitized. Leishmanian and crithidial forms of T. cruzi were more abundant in the stroma and the connective tissue surrounding some tumors. Retardation in tumor development did not result in longer survival. Endotoxin prepared from heat killed cultures of T. cruzi (Brazil strain) was withou effect against carcinoma 119 or against transplantable and spontaneous mammary tumors. The authors conclude that the results they obtained are not to be considered as contradicting the results of the Russians, Roskin and Klyueva, as their strain of T. cruzi has not been available to Hauschka and his co-workers.

Kansas Medical Society Journal, Topeka

48:209-256 (May) 1947

Surgical Treatment of Pilonidal Cysts and Sinuses. F. B. Emery—p. 209.
High Lights on Malaria. T. V. Oltman.—p. 219.

48:257-308 (June) 1947

Streptomycin. W. E. Herrell.—p. 257.
Penicillin and Streptomycin. Review of Their Current Uses. H. A Wenner.—p. 261.
*Typhoid Carrier State: Treatment by Cholecystectomy. S. L. Stout C. T. McCoy and H. Graber.—p. 273.

Cholecystectomy for Typhoid Carrier State.—A woman in her middle thirties had had typhoid a year before her hospitalization. During her typhoid she had been treated in a hospital for several weeks, but her stools continued positive. She was dismissed under surveillance of the public health authorities. The stool was positive for Eberthella typhosa on several occasions. During her stay of almost a month before surgical intervention, she was treated variously with succinylsulfathiazole, methenamine and penicillin, alone and in various combinations without effect. A cholecystectomy revealed a small, thick walled gallbladder containing a large number of small, many faceted stones. The stools remained positive for three weeks after the operation. Treatment with penicillin and sulfathiazole rendered the stools negative.

Michigan State Medical Society Journal, Lansing

46:489-608 (May) 1947

Serodiagnosis of Syphilis: Recent Advances. C. R. Rein.—p. 541.
Concept of Arterial Hypertension. B. C. Lockwood.—p. 550.
Gynecologic and Obstetric Problems of Industrial Physician. M. R. Burnell.—p. 555.
Tumors of the Female Breast: Diagnostic and Therapeutic Summary. R. D. McClure and D. E. Szilagyi.—p. 559.
Nutrition and Infection. J. A. Johnston.—p. 56[illegible]
Control of Virus Infections. T. Francis Jr.—p. [illegible]
Prevention of Tropical Diseases. H. A. K[illegible].—p. 568.

Military Surgeon, Washington, D. C.

100:375-462 (May) 1947. Partial Index

Venereal Disease Control in the United States Occupied Zone of Germany. M. C. Stayer and W. A. Brumfield Jr.—p. 375.
Some Phases of Fracture Treatment. R. L. W[illegible]h.—p. 381.
Flight Surgeon: His Role in Student Pilot Training. R. C. Cumming.—p. 385.
Army Veterinary Inspection of Foods of Animal Origin. S. C. Dildine.—p. 390.
Navy's Plastic Ocular Restoration. J. V. N[illegible].—p. 402.
Sanitary Engineer Views the Postwar World. [illegible] J. Blew.—p. 407.
Medical Administrative Corps Officers in the [illegible] Evacuation. J. R. Francis.—p. 414.

Minnesota Medicine, St. Paul

30:459-592 (May) 1947

Protein and Amino Acid Therapy. R. Elman.—p. 49[illegible]
Relationship of Infectious and Serum Jaundice. [illegible] G. Rukavina and E. L. Tuohy.—p. 498.
Plan for Detection of Source of Rectal Bleeding. H. E. Hullsiek.—p. 503.
The Cruveilhier-Baumgarten Syndrome: Report of Case. W. D. Sicher.—p. 506.
Sulfadiazine Granulocytopenia and Thrombocytopenia Complicating Pregnancy, with Survival: Report of Case. R. S[illegible] and N. M. Strandjord.—p. 509.

30:593-696 (June) 1947

Communitywide Chest X-Ray Surveys and General Practitioner. H. E. Hilleboe.—p. 625.
Meeker County Tuberculosis Control Project. K. A. Danielson.—p. 635.
*Toxoplasmosis. P. Kabler and M. Cooney.—p. [illegible]
*Trichinosis in Minnesota. C. B. Nelson.—p. 6[illegible]
Deafness, a Therapeutic Problem. A. C. Hilding.—p. 642.

Toxoplasmosis.—Infantile toxoplasmosis is usually characterized by widespread destruction of the central nervous system. In surviving patients residuals such as hydrocephalus, convulsions, chorioretinitis and mental retardation are frequent. The symptoms of adult toxoplasmosis may be extremely variable, with a greater tendency to widespread involvement of the viscera than in infantile infections. It may occur as an acute febrile disease with extensive maculopapular rash involving nearly the entire body. A second type of adult infection appears as a chronic process and presents no signs or symptoms of the disease except for neutralizing antibodies in the blood. The Minnesota Department of Health Laboratories initiated neutralization tests for the toxoplasma organisms. The technic of the test is essentially that described by Sabin in which patients' blood serums are mixed with suspensions of the organism and inoculated into the skin of white rabbits. The blood specimens usually were collected from patients showing one or more of the following: chorioretinitis, convulsions, hydrocephalus, cerebral calcifications, mental retardation and encephalitis or from the parents and siblings of patients who had previously shown a positive neutralization for toxoplasma. The results of tests on 832 specimens from 761 persons indicate that toxoplasmic infections are probably widespread in Minnesota.

Trichinosis in Minnesota.—Nelson says that in January the possibility of an outbreak of trichinosis was brought to the attention of the Minnesota Department of Health. On investigation, a total of 37 clinical cases of trichinosis was disclosed. Thirty-three of the cases occurred in a small village whose inhabitants are predominantly of Central European stock, accustomed to eating sausage frequently and often raw. The majority of patients gave a history of having consumed raw smoked country sausage. The sausage had been prepared for public sale by a local butcher from trimmings of freshly slaughtered pork. No samples of the suspected sausage were available for laboratory examination. The author stresses that prevention of trichinosis is at present the concern of the consumer, and the only safe advice is to be sure that all pork is thoroughly cooked or adequately processed before consumption.

New England Journal of Medicine, Boston

236:817-850 (May 29) 1947

*Oral Administration of Penicillin: Use in 150 Cases. S. Ross, F. G. Burke and S. Olansky.—p. 817.
Treatment of Hysterical Amnesia by Purely Pharmacologic Means. A. Myerson.—p. 821.
Metastatic Melanocarcinoma Involving the Small Intestine and Brain: Report of a Case, with a Discussion of Malignant Tumors of the Small Intestine. J. Spier and E. C. Wood.—p. 824.
General Anesthesia. C. Harris and U. H. Eversole.—p. 829
Endometrial Sarcoma? Stromal Endometriosis (Endolymphatic Fibromyosis of Frank)?—p. 835.
Multiple Carcinoids of Ileum, with Metastases to Mesenteric Lymph Node.—p. 839.

Oral Administration of Penicillin.—Ross and his associates administered penicillin orally in a total of 150 cases, including gonorrhea, subacute bacterial endocarditis, pneumonia, syphilis, cellulitis, impetigo and acute pharyngotonsillitis. The commercial penicillin tablets used in this study were effective in penicillin susceptible infections if given in sufficiently large doses. The fundamental principles of penicillin therapy when the oral route is employed do not differ materially from those attendant on the parenteral administration except for the greater oral dose required. In adults with gonorrhea, for instance, an arbitrary dosage schedule of 50,000 units of penicillin was administered every three hours for six doses, or a total of 300,000 units. No categorical statement is possible regarding the optimal oral dose of penicillin. The dosage varies from case to case, depending on the severity and the type of infection.

236:851-881 (June 5) 1947

*Pregnancy Following Lumbodorsal Splanchnicectomy for Essential and Malignant Hypertension and Hypertension Associated with Chronic Pyelonephritis. J. L. Newell and R. H. Smithwick.—p. 851.
Disturbances of Metabolism Associated with Head Injuries. W. Pickles.—p. 858.
Outbreak of Influenza B Infection: Epidemiologic Observations. A. D. Rubenstein, E. M. Ory, M. Meads and M. Finland.—p. 862.
Pediatrics Members of the Staffs of Children's and Infants' Hospitals.—p. 867.
Severe Coronary Arteriosclerosis with Extreme Narrowing: Arteriolar Nephrosclerosis.—p. 874.
Dissecting Aneurysm of Aorta, with Rupture into Left Pleural Cavity.—p. 877.

Pregnancy Following Splanchnicectomy for Hypertension.—Newell and Smithwick say that severe hypertension is considered by many an indication for therapeutic abortion. They report 14 cases of arterial hypertension, the pressures on admission prior to splanchnicectomy averaging 196 systolic and 130 diastolic. The time elapsing between the diagnosis of hypertension and the splanchnicectomy averaged seventy-five months. The time between splanchnicectomy and the pregnancy averaged thirty-one months, with the exception of a case in which splanchnicectomy was performed during the first trimester. Fourteen living infants were delivered. Three of the patients had so-called malignant hypertension prior to lumbodorsal splanchnicectomy. They responded favorably to operation and tolerated subsequent pregnancy well. The other 11 patients had severe essential hypertension with or without chronic pyelonephritis. These patients also are living and well following pregnancy. The hypertension was much improved over that prior to splanchnicectomy. The authors conclude that certain hypertensive women may be able to tolerate pregnancy following this operation, which otherwise would be impossible or extremely hazardous. This is particularly true in the younger age group with severe essential and even malignant hypertension.

New York State Journal of Medicine, New York

47:1057-1184 (May 15) 1947

*Protamine Insulin Mixtures in Treatment of Diabetes Mellitus. A. R. Colwell.—p. 1103.
*Clinical Use of Penicillin in Water-in-Oil Emulsion. P. K. Kaufman —p. 1111.
Summary of Bronchoscopy in Diseases of Chest. J. M. Blake.—p. 1115.
Benadryl: Synthetic Antihistamine Compound for Symptomatic Treatment of Allergic Diseases. L. Farmer and H. Spickschen.—p. 1119.
Peroral Removal of Certain Swallowed Foreign Bodies Without Endoscopy: Introducing New Device Utilizing Alnico Magnet. S. Silber and B. S. Epstein.—p. 1122.
Clinical Use of Vitamins E and C. J. R. Williams.—p. 1125.
Tropical Diseases Found in Veterans. H. B. Shookhoff and W. D. Sutliff.—p. 1127.
Digitalis and Embolic Manifestations Associated with Rheumatic and Arteriosclerotic Heart Disease. S. Epstein.—p. 1131.
Seven and One Half Year Review of Pneumonia Therapy. F O. Kraus. —p. 1132.

Protamine Insulin in Diabetes Mellitus.—During the last five years Colwell has treated 150 persons who had diabetes mellitus of sufficient severity so that good balance with protamine insulin alone was unobtainable with mixtures of insulin and protamine zinc insulin. About half of the patients were less than 20 years of age at the onset of diabetes. Diets of moderate carbohydrate value were used, usually carbohydrate equal to fat in grams. Only 4 of the 150 with severe diabetes obtained poorer control with mixtures. One hundred and twenty-seven of the 146 using mixtures were balanced satisfactorily on a 2:1 mixture (two parts of regular or crystalline insulin with one part of protamine zinc insulin, both in the U-80 strength) practically always in a single dose daily. In 5 patients, 2⅓:1 mixtures and in 11 patients 2½:1 mixtures were more efficient. Three patients, all rapidly growing juveniles at about the age of puberty, obtained best control with 3:1 proportions. In not a single instance has it been found desirable to use less than 2:1 proportions or to exceed 3:1 ratios. The amount of insulin required for good control was about 10 per cent less, on the average, than with other insulins. Glycosuria was easier to avoid. Insulin shock was less frequent and not so violent. Unexpected irregularities of adjustment were less frequent. General health was better as a rule. These advantages were gained in spite of the fact that only one injection daily was required by nearly all patients.

Penicillin in Water-in-Oil Emulsion.—Kaufman treated 167 persons who had various acute infections, such as pneumonia, follicular streptococcic tonsillitis, pyelitis, sinusitis, acute otitis media, scarlet fever, streptococcic asthmatic bronchitis and furunculosis, with intramuscular injections of penicillin in water-in-oil emulsion. Treatment was given mainly at home or in the office. The extemporaneously prepared water-in-oil emulsions were less expensive and simpler to use than the beeswax-peanut oil mixtures of penicillin. Usually one injection of 200,000 units (3.75 cc. of emulsion) in each twenty-four hour period was given. In a few instances two injections a day were given. Clinical results were as effective as those obtained by the use of penicillin in aqueous solution injected every three or four hours.

Ohio State Medical Journal, Columbus

43:573-688 (June) 1947

Surgical Treatment of Bleeding Peptic Ulcer. R. D. McClure and L. S. Fallis.—p. 605.
*Rocky Mountain Spotted Fever in Ohio. L. R. Evans, F. H. Austin and E. W. McCall.—p. 608.
Some Reflections on Psychosomatic Medicine. R. E. Pinkerton.—p. 613.
Use of Sex Hormones in Clinical Practice. A. C. Barnes.—p. 616.
Diagnosis of Visual Losses with Normal Fundus. D. J. Lyle.—p. 620.
Parenteral Use of Fluids in Infancy. E. H. Baxter.—p. 622.
Indications and Contraindications for Spinal Anesthesia. N. E. Lenahan. —p. 626.
Studies in Human Inheritance: XXIX. Statistical Analysis of Rh-Hr Incompatibility, with Illustrative Data from Cases of Dementia Precox. Ann G. Stancu, P. C. Clark and L. H. Snyder.—p. 628.
Rare Cause of Miscarriage of Twin Fetuses: Case Report. A. Woodburn.—p. 631.

Rocky Mountain Spotted Fever.—Evans and his co-workers report 70 cases of Rocky Mountain spotted fever which occurred in Ohio during the past decade. The most highly infected area is between Columbus and the Ohio River; it is more wooded than much of the terrain in other parts of the state and therefore supports better the necessary small animal reservoir as well as the tick population. Nineteen patients died. The removal of a blood filled tick from the body of a boy was strong evidence of the possibility of spotted fever. The continuation of fever beyond a week and a macular rash later becoming papular and before the end of the first week hemorrhagic should make the physician suspicious of spotted fever even though laboratory diagnostic aids are not available. The agglutination of the Proteus organism, particularly the X-19 strain, and the production of rickettsial lesions in the scrotum of a guinea pig following the intra-abdominal injection of the patient's blood may aid in diagnosis, although serial inoculations are required occasionally. Active treatment of the disease consists of antiserum, para-aminobenzoic acid and supportive measures with infusions of plasma and fresh whole blood. The yearly use of immunization is recommended in a dose of 2 cc. of Rocky Mountain spotted fever vaccine given twice at a five day interval. This is not thought to be valuable longer than one season.

Public Health Reports, Washington, D. C.

62:697-732 (May 16) 1947

Studies of Sewage Purification: Utilization of Organic Substrates by Activated Sludge. O. R. Placak and C. C. Ruchhoft.—p. 697.

62:733-776 (May 23) 1947

Voluntary Health Insurance in Western Europe: Origins and Place in National Programs. G. St. J. Perrott and J. W. Mountin.—p. 733.

South Carolina Medical Assn. Journal, Florence

43:127-156 (May) 1947

Wounds of the Heart: Case Reports. A. G. Brown.—p. 127.
Emergency Tracheotomy. F. Warder.—p. 131.
Public Health Problem: Importation of Diseases in Postwar America. D. D. Brockman.—p. 133.

Southern Surgeon, Atlanta, Ga.

13:299-364 (May) 1947

Acute Malignant Obstruction of Large Bowel: Analysis of 55 Cases. M. L. Michel.—p. 299.
Endometriosis. I. Abell and I. Abell Jr.—p. 321.
Osteomyelitis Today. D. T. Imrie.—p. 330.
Amputations About the Foot Following Trauma. H. D. Morris.—p. 341.
Pressures on the Heart. C. S. Beck.—p. 348.
Carcinoma of the Breast: Treatment and Prevention. W. P. Nicolson Jr.—p. 354.

Texas State Journal of Medicine, Fort Worth

42:673-740 (April) 1947

Indications for Pulmonary Resection. O. T. Clagett.—p. 679.
Management of Menopause and Climacteric. W. P. Devereux.—p. 683.
Rh Factors in Hemolytic Disease of the Newborn. J. A. Nunn.—p. 687.
The Glaucoma Patient. E. W. Griffey.—p. 690.
Clinical Disorders Associated with Functional and Organic Disturbances in Hypothalamic and Other Midbrain Centers. A. Grollman.—p. 693.
Endocrine Problems in Childhood. May Agness Hopkins.—p. 695.
Hanging Cast. R. L. Sewell.—p. 696.

43:1-42 (May) 1947

Potential Pathologic Significance of Dusts Found in Texas Industry. C. U. Dernehl.—p. 4.
Medical Management of Esophageal Disorders: Further Report. C. O. Patterson.—p. 9.
Surgery of Pancreas. O. T. Clagett.—p. 12.
Management of Carcinoma of Colon. R. L. Sanders.—p. 17.
Diverticula of Duodenum. A. G. Barsh.—p. 21.
Intermenstrual Pain. A. E. Winsett.—p. 24.
Clinical Experiences with Intracranial Complications of Ear and Sinus Diseases. G. Mitchell.—p. 25.
Pathologic Basis for Chronic Cardiac Valvular Lesions. C. T. Ashworth. —p. 29.
*Talc Granuloma. S. A. Wallace.—p. 33.

Talc Granuloma.—Wallace directs attention to the injurious effects of talcum powder when used as a dusting powder for surgical gloves. The lesions found in experimental animals and in human beings when talc gains entrance to the peritoneal cavity are granulomatous in appearance, with giant cells, fibrous connective tissue and lymphocytes. The author reports the occurrence of a talc granuloma of the appendix which developed in a man aged 56 who had had two previous abdominal operations. The injurious effects of silica are discussed.

FOREIGN

An asterisk (*) *before* a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Dermatology and Syphilis, London

59:125-198 (April-May) 1947

Study of Miliaria Rubra, Tropical Anhidrosis and Anhidrotic Asthenia. J. P. O'Brien.—p. 59.
Experiences in Skin Department of Prisoner of War Camp Hospital in Singapore, 1942-1945: Part II. L. Sefton.—p. 159.
*Sensitivity to Burnt Coal Gas. P. H. Mumford and G. Auckland. —p. 169.

Sensitivity to Burnt Coal Gas.—According to Mumford and Auckland, allergy to burnt coal gas, as contrasted with unburnt gas, does not appear to have been reported. Their patient was a woman aged 59 who reported recurrent congestion, *erythema and irritation o. the cheeks and eyelids over a period* of two years. Attacks were not severe till November 1945, when an intense inflammation of the face, eyelids and neck developed. This attack was accompanied with general malaise. Spontaneous recovery followed in five days. She attributed the attack to visits to her place of employment, where she and others often remarked on a burnt gas smell. The diagnosis of dermatitis due to contact with burnt coal gas was suggested by the history. Positive response to burnt as contrasted with unburnt gas showed sensitivity to some constituent of the former. Heat was shown to play no part (the negative response to a coal fire, and a gas fire with an efficient flue). There is some evidence that the minute traces of aldehydes produced by burnt coal gas were the responsible irritant

British Journal of Tuberculosis, London

46:33-54 (April) 1947

*Intestinal Tuberculosis: Some Observations. R. Y. Keers.—p. 33.
Obscure Case of Lymphadenopathy with Pulmonary Fibrosis. M. Davidson and L. R. Woodhouse Price.—p. 38.
Significance of Negative Tuberculin Test. B. Coats.—p. 42.
Miliary Carcinoma of Lung. C. F. Hawkins.—p. 48.

Intestinal Tuberculosis.—Keers reports 6 cases of intestinal tuberculosis occurring in association with moderately extensive pulmonary disease. A low residue, high vitamin diet, calcium and ultraviolet light were the chief therapeutic measures. This regimen is of considerable value in such cases, but the permanence of any result achieved is dependent on effective control of the parent lesion in the lung

British Medical Journal, London

1:751-794 (May 31) 1947

Dental Condition of 5 Year Old Children in Institutions and Private Schools Compared with L. C. C. Schools. Helen Coumoulos and May Mellanby.—p. 751.
*Penicillin-Treated Series of Cases of Osteomyelitis in Childhood. T. T. Higgins, D. Browne and M. Bodian.—p. 757
*Refrigeration *Anaesthesia.* E. S. R. *Hughes.—p. 761.*
Primary Malaria in London Children: Report of 2 Cases. C. B. Levick and M. E. MacGregor.—p. 764.

Penicillin in Osteomyelitis in Childhood.—The three series of cases *reviewed by Higgins* and his associates included 31 cases of acute osteomyelitis, 4 cases of acute suppurative arthritis and 5 cases of chronic osteomyelitis. Of the acute cases 50 per cent were in infants under 1 year old. Dosages of penicillin were relatively small—1,000 units per pound (454 Gm.) of body weight in twenty-four hours for three weeks. In acute osteomyelitis and arthritis surgery was confined to aspiration of pus. Immobilization was *partial and for short periods.* In suitable cases of chronic osteomyelitis excision of infected tissue and primary suture is advised. Mortality was nil. Complete restoration of function occurred in all but 1 of the acute cases. There was *apparent complete* healing in all the chronic cases.

Refrigeration Anesthesia.—Refrigeration anesthesia for limb amputations was introduced into the Royal Melbourne Hospital toward the end of 1944. Since then 25 lower limb amputations have been performed with the aid of this technic. The most simple technic was used. Bronchopneumonia was the most frequent complication. Hughes discusses recent opinions concerning the effects *of cold temperatures and the application* of tourniquets. He concludes that although refrigeration is a valuable form of anesthesia he does not think that it should be used for all cases of amputation. He admits that there are certain bad risk cases in which life can be saved by resort to this technic.

Glasgow Medical Journal

28:145-172 (June) 1947

*Observations on Use of Benadryl in Duodenal Ulcer. A. W. Kay, L. D. W. Scott and W. E. Smith.—p. 145.
Some Aspects of Acute Pyelonephritis in Practice. J. W. Ferguson. —p. 149.
Thiouracil and Methylthiouracil in Treatment of Thyrotoxicosis. J. C. Eaton.—p. 155.

Benadryl in Duodenal Ulcer.—Kay and his associates used benadryl for duodenal ulcer in a small number of patients. Although the trial was *primarily* designed to assess the action of benadryl on gastric motility, the opportunity was taken to estimate its influence on gastric acidity, and a careful record was *made of any change in the clinical condition of the patient.* They were unable to show that benadryl has any influence on gastric motility even with doses sufficiently large to produce troublesome drowsiness. It has also been impossible to show any constant lowering of gastric acidity. Against these negative observations may be set the clinical findings. A short course of benadryl was followed by relief of all symptoms in 3 cases and by clinical *improvement in 2 cases,* leaving only 1 to be classified as a failure. But peptic ulceration with its characteristic remissions is peculiarly unsuited for therapeutic trials assessed on a purely clinical basis.

Journal of Endocrinology, London

5:59-110 (April) 1947. Partial Index

Factors Involved in Maintaining Involution of the Thymus During Suckling. C. Gregoire.—p. 68.
Inactivation of Chorionic Gonadotropin by X-Rays. A. Hochman, R. Black, G. Goldhaber and F. Sulman.—p. 99.
Induction of Diabetes by Means of Alloxan. J. H. Gaarenstroom. —p. 103.

Quarterly Journal of Medicine, Oxford

16:47-98 (April) 1947

Edema in an Internment Camp. R. A. Pallister.—p. 47.
*Mepacrine and Falciparum Malaria. J. Reid.—p. 61.
Review of Chronic Intermittent Juvenile Jaundice. E. Meulengracht. —p. 83.

Quinacrine and Falciparum Malaria.—The experiments described by Reid were undertaken on volunteers in London to provide information on the correct use of quinacrine in the forces campaigning in highly malarial parts of the world. It was found that a sustained quinacrine blood level of at least 100 micrograms per liter of blood was required to prevent malaria. Blood quinacrine levels of less than 100 micrograms per liter in volunteers inoculated with sporozoites invariably resulted in a real attack of malaria with parasitemia or a transient fever without obvious parasitemia. The transient fever appeared to *be an early sign of an impending attack of malaria in non*-immune volunteers, because it invariably developed at the same time as malaria would have been expected and because malaria was transmitted on one occasion by injecting blood from an inoculated volunteer taken at the onset of transient fever. The incidence of transient fever in soldiers taking the routine dose of 0.1 Gm. of quinacrine daily for malaria prevention in hyperendemic areas would be expected to be high, because about one third of the blood quinacrine estimations in the volunteers taking this dosage were below the critical value of 100 micrograms per liter after the first six weeks. The rise in blood quinacrine *cured the fever. It is suggested that this rise is due to a* transference of quinacrine to the blood from the high tissue reserves as a result of the acidosis of fever. Serious toxic reactions from quinacrine are associated with a high blood level of the drug. Alimentary disturbances are probably due to the local action of quinacrine. They may be prevented if liberal quantities of fluid are taken. This is of particular importance in the treatment of malaria, as sweating causes dehydration. Degradation is the most important factor that influences the level of the drug in the blood. After the drug has been taken for about two months, about 70 per cent of each daily dose of *0.1 Gm. is degraded. Assessment of the value of quinacrine by* estimation of the blood levels proved superior to the older practice of assessment on a dosage basis.

Archives des Maladies de l'Appareil Digestif, Paris

36:1-128 (Jan.-Feb.) 1947

*Treatment of Generalized Essential Rectocolic Polyposis. J. Charrier, P. Hillemand and L. Hartmann.—p. 5.

Solitary Abscess of Liver Due to Staphylococcus. L. Dejou and Chippaux.—p. 16.

*Hargreaves-Blanc's Method of Treatment of Chronic Amebiasis and of Its Relapse in Tropical Environment, Based on One Hundred Observations. F. Siguier.—p. 33.

Rectocolic Polyposis.—Charrier and his co-workers report 1 case of generalized rectocolic polyposis in a woman aged 22. Thirty to forty rectal and sigmoidal polypi were destroyed by electrocoagulation when treatment was started. This was followed by ileosigmoidostomy and one month later by colectomy. Rectal hemorrhages recurred three years later and small polypi were destroyed by repeated electrocoagulation. Rectal hemorrhages recurred again three years later resulting from new polypi which were not accessible to endoscopic control or treatment. Resection of the colon and of the rectum was done in two stages, the first abdominal, the second perineal. Anastomosis of the ileum to the anus instead of an abdominal ileostomy ensured sphincteric control. Penicillin and local sulfonamide therapy facilitated primary suture of the perineal incision. Microscopic examination of the specimen revealed malignant degeneration of two polypi, one in the sigmoid flexure and the other in the rectum. It is emphasized that intervention should not be delayed until the patient has reached the state of cachexia and confluent polyposis.

Hargreaves-Blanc Treatment of Amebiasis.—Treatment of chronic amebiasis in patients from Burma and Indo-China by simultaneous administration of penicillin, sulfonamide compounds and emetine was practiced independently by Hargreaves in England and by Blanc in France. Siguier employed this method for "thrust" treatment of 100 patients with severe chronic amebiasis. For the first seven days they were given 0.42 Gm. of emetine, 1,400,000 units of penicillin and 112 Gm. of sulfanilyl guanidine monohydrate. Penicillin and sulfaguanidine were discontinued on the eighth day, but emetine administration was continued with 0.04 Gm. daily until the patient had received as many centigrams of the drug as his body weight amounted to in kilograms. The patients were not subjected to strict rest in bed, received no other treatment and were not placed on a special diet. In a few days the number of stools was reduced considerably and there was a definite improvement in the general condition. This effect was permanent in only 50 per cent of the cases, while relapses occurred in the other 50 per cent. The relapses occurred at much longer intervals, from one to three months, as compared with those of from ten to fourteen days in patients who had received only emetine treatment. The frequent association of cumulative toxicity of emetine with the dysenteric relapse could be prevented and the amebic dysentery made amenable to treatment. Penicillin and sulfaguanidine are effective in controlling the colitis of severe chronic amebiasis.

Archives des Maladies Professionelles, Paris

7:437-512 (No. 6) 1946

*Prevention and Treatment of Silicosis with Metallic Aluminum and with Aluminum Hydrate. A. Policard and A. Hanaut.—p. 437.

Etiologic, Clinical and Chemical Study of 40 Cases of Occupational Chronic Intoxication with Carbon Monoxide. M. Duvoir and M. Gaultier.—p. 449.

Disease Caused by Vibrations. B. Desplas and P. Bernard.—p. 453.

Comparative Study of Anthropometric and Biometric Rules in Europeans and North Africans According to Age, Sex and Occupation. P. R. Bize.—p. 465.

Prophylaxis of Silicosis in Mines. J. Magnin.—p. 475.

Prevention and Treatment of Silicosis.—Policard and Hanaut's experiments on rats demonstrated that the admixture of 5 per cent metallic aluminum powder or aluminum hydroxide to quartz particles may inhibit the sclerosing effect of the latter on the liver (by the intravenous route) or on the lungs (by inhalation or by intratracheal injections). The aluminum particles were accumulated in the cells containing dust, and agglomeration of those cells was responsible for the blockage of alveoli. The cells which contained the dust did not seem to be changed but appeared immobilized by the numerous particles which they contained. These observations correspond to those of L. U. Gardner on the accumulation of particles in the elements of the reticuloendothelial system and on the resulting blockage. It is suggested that this inhibitory effect results from the formation of a protective film around the silica particles, the dissolution of which may thus be prevented. One must be cautious in applying these experimental results to man. Favorable results have so far been obtained by the application of metallic aluminum powder or of aluminum hydroxide only with regard to functional disturbances, particularly dyspnea. It is likely that these results may depend on psychologic factors, but the results nevertheless justify the continuation of methodical and impartial trials.

Semaine des Hôpitaux de Paris

23:965-1028 (April 21) 1947

Inaugural Lecture on Induction into Chair for Medical Pathology. R. Moreau.—p. 965.

*Chorionepithelioma Not Preceded by Vesicular Mole. J. Ravina and B. Jamain.—p. 974.

Chorionepithelioma.—Ravina and Jamain report a case of malignant chorionepithelioma of the uterus in the absence of molar pregnancy in a woman aged 23. The patient was delivered in December 1944 at term of a normal infant. Normal menstruation occurred in February 1945. There was a period of amenorrhea between February and May 1945, followed by metrorrhagia until July 1945 and associated with loss in weight and asthenia. Metrorrhagia disappeared after six injections of progesterone. There followed a second period of amenorrhea until February 1946, when a subtotal hysterectomy was performed. Microscopic examination of the uterus revealed infiltration with Langhans and syncytial cells, i. e. an atypical form of chorionepithelioma as described by Marchand. The presence of a vascular mole which might have preceded the chorionepithelioma was not demonstrated, and this holds true whether the etiologic concept of chorionepithelioma following the pregnancy terminated in December 1944 or that of chorionepithelioma following a new pregnancy beginning in July 1945 is considered.

Cardiologia, Basel

11:175-302 (Nos. 4 & 5) 1946-1947. Partial Index

New Method for Determination of Beat Volume of Heart. O. Hubacher and M. Nyffeler.—p. 175.

*Cutaneous Precordial Anesthesia in Angina Pectoris and Coronary Occlusion. I. Lindgren.—p. 207.

Isolated Diffuse Interstitial Eosinophilic Myocarditis. W. Reinhart. —p. 219.

Cutaneous Precordial Anesthesia in Angina Pectoris and Coronary Occlusion.—Lindgren induced typical attacks of angina pectoris in many patients by hypoxemia or exercise. Effect of anesthesia was studied during these attacks. The anesthesia was induced with 1 per cent procaine solution without admixture of epinephrine, 10 to 25 cc. usually being used. It was found that after induction of precordial anesthesia standardized hypoxemia and exercise tests produced less pain and less electrocardiographic changes than a corresponding test without anesthesia. This may indicate that amelioration of anginal pain is accompanied with improved coronary circulation. Patients submitted to extensive cervicothoracic sympathectomy and exposed to the same functional tests before and after operation likewise show less pain and improved electrocardiograms postoperatively. Precordial anesthesia by means of a local anesthetic of long-standing action in patients with myocardial infarction has proved a valuable therapeutic agent in relieving pain in patients in whom morphine was ineffective.

Gazzetta Medica Italiana, Milan

106:19-44 (Feb.) 1947. Partial Index

Pneumoperitoneum in Treatment of Pulmonary Tuberculosis: I. Peritoneal Cavity. D. Puglisi.—p. 20.

Thoracicoabdominal Relationship. T. Bianco and D. Puglisi.—p. 21.

Pneumoperitoneum in Treatment of Intestinal Tuberculosis. C. Palenzona.—p. 28.

*Pneumoperitoneum in Treatment of Pulmonary Tuberculosis. A. Restellini and G. Bardesono.—p. 31.

Pneumoperitoneum in Pulmonary Tuberculosis.—According to Restellini and Bardesono pneumoperitoneum reduces the protein concentration of the serum; there is a tendency toward shortening of the blood sedimentation rate. A hemoclastic crisis was suggested by eosinophilia. The introduction of large quantities of air with pneumoperitoneum maintained at an elevated pressure was responsible for a tendency toward slowing of the pulse and increased arterial tension. Pneumoperitoneum did not reduce the vital capacity of 12 patients in whom the vital capacity was determined before and after pneumoperitoneum was performed

106:45-68 (March) 1947. Partial Index

Pneumoperitoneum in Treatment of Pulmonary Tuberculosis: II. Roentgenologic Symptomatology of Pneumoperitoneum. M. Boffano.—p. 45.
*Treatment of Bronchial Asthma with Pneumoperitoneum. M. Taraglio. —p. 61.

Pneumoperitoneum for Bronchial Asthma.—Taraglio treated with pneumoperitoneum 17 patients between the ages of 25 and 58 who had bronchial asthma Four patients had essential bronchial asthma, 10 patients presented an asthmatic syndrome associated with tuberculosis and 3 patients were silicotic, with tuberculous complications and an asthmatic syndrome. In the first group the asthmatic attacks with cough and dyspnea disappeared almost completely after pneumoperitoneum was repeated two or three times. In 1 case the arterial tension was reduced from 175 to 150. In the second and third groups (13 patients) the asthmatic disturbances disappeared completely in 4 patients within the first twenty days after treatment was instituted, in 7 patients the same good result was obtained in sixty days, and 3 patients were improved considerably. There was a drop in temperature, less cough was present and appetite and gastrointestinal function were improved Patients should be hospitalized for the treatment. The mechanical action of the pneumoperitoneum has a reflex and nervous effect Particular stimuli may be associated with the thoracicoabdominal relationship and supported by the existence of a reflexogenic zone in the abdomen by which the respiratory activity may be influenced.

Medicina Internazionale, Milan

55:49-100 (March-April) 1947. Partial Index

Pernicious Anemia in Syphilitic Infection. G. B. Cottini.—p. 49.
*Acetylcholine Treatment of Schizophrenia. A. M. Fiamberti.—p. 60.
Pathology of Hydrosaline Exchange in Infants with Reference to 1 Case of Diabetes Insipidus. E. Schwarz-Tiene.—p. 66.
Tropical Physiopathology. L. Supino.—p. 69

Acetylcholine Treatment of Schizophrenia.—Fiamberti treated 311 schizophrenic patients with massive doses of acetylcholine by the intravenous route. One hundred daily injections of 0.50 Gm. of acetylcholine bromide in 2 cc. of distilled and sterilized water or five courses of twenty injections at intervals of one week were given. Only half the dose (0.25 Gm.) was used for the first three injections of all patients and throughout the entire treatment of patients with decisive vagotonia. Complete recovery occurred in 99 patients (47 men and 52 women), 136 patients (79 men and 57 women) were improved and 76 patients (28 men and 48 women) were failures. It is suggested that acetylcholine has a direct and specific effect on the mechanism of liberation of the mediator substance by which the disturbed interneuronic transmission of the nervous impulses with the resulting dissociation may be restored to normal.

Deutsche medizinische Wochenschrift, Stuttgart

71:241-280 (Nov. 15) 1946. Partial Index

Alloxan Diabetes. E. Abderhalden.—p. 241.
Differential Diagnosis of Bone Diseases Accompanied with Rheumatism. A. Heinrich.—p. 246.
*Prognostic Evaluation of Epidemic Hepatitis. A. Störmer.—p. 250.
Contraction Atelectasis by Pulmonary Spasm. A. Sturm.—p. 255.
Action of Cold on Total Organism. W. Schneider.—p. 259.
*Pathogenesis of Tuberculous Meningitis. E. Achelis.—p. 262.

Prognostic Evaluation of Epidemic Hepatitis.—According to Störmer the prognosis differs in the various forms of epidemic hepatitis. In the war epidemics the cases were usually mild and uncomplicated. The disease is apparently less harmful in adults than in children, but in young and strong adults it usually takes a milder course than in older persons with less resistance. The sooner the patient comes under treatment and the more consistently the treatment is carried out, the sooner will the symptoms subside. In all stages of the disease there exists impairment of the hepatic cells with reactions on the capillary walls and regressive processes in the epithelial apparatus which finally involve the entire liver in toxic or anoxemic process. Epidemic hepatitis may be regarded as a serious impairment of the hepatic cells. The importance of the hepatic function in the intermediate metabolism indicates that a period of rest is necessary in order to facilitate the regeneration of the damaged liver cell.

Pathogenesis of Tuberculous Meningitis.—Achelis reviews observations on 200 cases of tuberculous meningitis which came up for necropsy at the Rostock Pathologic Institute between 1935 and 1945. The number of male and female patients was nearly equal. The seasonal incidence was highest in June and lowest between October and January. The disease was most frequent in children under 2 years of age. Fifteen per cent of the patients had solitary tubercles in the brain. Tuberculous processes in the vertebrae were the point of origin from which the tuberculous meningitis spread by continuation in 4 per cent of the cases. Hematogenic dissemination is of greatest importance. Occasionally, trauma may be the eliciting cause. As regards the mode of manifestation, the author differentiates 4 groups of cases: In the first group tuberculous meningitis concurred with the primary complex without other tuberculous processes. This form was seen chiefly in young children. In the second group tuberculous meningitis concurred with early generalization; this form likewise was most frequent in young children. The third group, in which tuberculous meningitis was associated with general miliary tuberculosis, was the largest. In the fourth group the tuberculous meningitis was associated with tuberculosis of certain organs, chiefly the lung, but in some of these there also existed a generalized miliary tuberculosis.

Acta Dermato-Venereologica, Stockholm

27:173-258 (No. 3) 1947

Method of Therapeutic Application of Massive and Progressive Doses of Amide of Nicotinic Acid: Cure of 6 Cases of Erythema Induratum (Bazin) and Results Obtained in Tuberculous Adenopathies. J. Ferreira-Marques.—p. 173.
Contribution to the Zoster-Varicella Question: Two Cases of Generalized Herpes Zoster. T. Granroth.—p. 198.
*Treatment of Lupus Vulgaris with High Doses of Calciferol. W. J. Hohmann and G. W. Beening.—p. 207.
*Bakers' Eczema in Finland. O. Kilpinen.—p. 216:
Effect of Antihistamines on Intracutaneously Injected Histamine, Peptone, Morphine Hydrochloride and Atropine Sulfate. A. Nilzén. —p. 225.
Experimental and Clinical Investigations of Recent Antihistamines and Their Effect on Allergic Diseases. P. H. Nexmand and O. Sylvest. —p. 231.

High Doses of Calciferol in Lupus Vulgaris.—Hohmann and Beening used Dowling's method of treatment in 87 patients with lupus vulgaris. The method consists in administering vitamin D_2 or calciferol in tablet form. The tablets used by Hohmann and Beening contain 30,000 international units of calciferol each. During the first week the patients are given one tablet three times daily, then for three months one tablet five times daily, and after that the dose is decreased to three tablets and then to one tablet a day. The majority of patients had been treated for years with local remedies either without effect or with only temporary improvement. The effects of calciferol treatment were fine without exception. This method gives rise to no complaints and is easy to employ.

Bakers' Eczema in Finland.—Kilpinen found that 8 of 653 bakers he investigated had bakers' eczema. This incidence of only slightly more than 1 per cent contrasts with the much greater frequency observed ten or twenty years ago. Furthermore, the symptoms are less severe now. The author thinks that an explanation for the rare incidence of bakers' eczema nowadays lies partly in the fact that bakeries use more machinery, which reduces handling of the dough by hand. Formerly, when the dough was kneaded by hand, the flour and dampness caused chapping of the surface of the skin. The flour proteins and flour improving substances were enabled to influence through the small openings the deeper tissues of the skin, gradually effecting the sensitization of the skin to these substances. Another noteworthy factor is the decrease in the use of the persulfates.

Book Notices

Rh: Its Relation to Congenital Hemolytic Disease & to Intragroup Transfusion Reactions. By Edith L. Potter, M.D., Ph.D., Assistant Professor of Pathology, Department of Obstetrics and Gynecology, the University of Chicago and the Chicago Lying-In Hospital, Chicago. Cloth. Price, $5.50. Pp. 344, with 65 illustrations. Year Book Publishers, Inc., 304 S. Dearborn St., Chicago 4, 1947.

Since Landsteiner and Wiener announced the discovery of the Rh factor in January 1940, papers related to the factor and to its applications have been appearing at an ever increasing rate. Seven hundred items are listed in Dr. Potter's book. Even those especially interested in the subject have difficulty keeping abreast. Dr. Potter's monograph appeared at a very opportune moment when the need for a survey became extremely acute.

The first chapter, a general survey, is a twenty page summary and seems to have been placed at the beginning as a realistic concession to those who like to start a book by reading the summary usually found at the end. The historical background is presented in the second chapter. The immunologic relations of the Rh antigens and antibodies are covered in chapter three. This phase of the Rh factor is the most difficult to present to the noninitiated, and some writers have succeeded in making it so obscure that many turn away when they hear the topic mentioned. Potter's presentation is admirable in its lucidity and logic of development. The chapter can be recommended as the best antidote to those who have become confused by other writings on immunology of the Rh factor.

The subject of chapter four is the Rh factor in transfusion reactions. Chapter five deals with hemolytic disease (fetal erythroblastosis). The author's special experience in this field is apparent in her masterful handling of the various phases: clinic, diagnosis, pathology and treatment. The technic of Rh testing is treated in the last, sixth, chapter. The sixty-five illustrations are excellent.

It is fortunate that the first monograph on the Rh factor has been done so exceedingly well. Physicians will find here a clear, critical and fascinating presentation of one of the most talked of subjects of modern medicine.

Psychological Research in the Theaters of War. Edited by William M. Lepley Associate Professor of Psychology, Pennsylvania State College, State College, Pennsylvania. Army Air Forces Aviation Psychology Program Research Reports, Report No. 17. Cloth. Price, $1. Pp. 202. Supt. of Doc., Government Printing Office, Washington 25, D. C., 1947.

Before the United States entered World War II, psychologists had begun to work out technics of selection of combat crews. Their technics tested aptitude and intelligence and were considered highly successful, although validation was never scientifically achieved. These psychologists so completely sold their services to the air forces that the utilization of psychiatrists for the study and treatment of emotional disorders was greatly neglected. The cost in man power was probably greater than that saved through psychologic selection. The present volume represents the type of psychologic research that completely excludes the dynamic emotional factors responsible for failure in combat. There are dozens of statistical tables concerned with scores, validated by the adage that this is a scientific or score keeping age, and if one doesn't keep score one never knows the score. The editor admits that the evidence presented is at once tenuous and massive and that few of the validity indexes considered by themselves are impressive. This book represents the results of a worldwide investigation at tremendous cost in money and personnel. Its results seem hardly commensurate.

Functional Cardiovascular Disease. By Meyer Friedman, M.D., Director, Harold Brunn Institute for Cardiovascular Research, Mt. Zion Hospital, San Francisco. Cloth. Price, $3. Pp. 266. Williams & Wilkins Co., Mt. Royal & Guilford Aves., Baltimore 2, 1947.

This book proposes a new name, "functional cardiovascular disease," for neurocirculatory asthenia, and a new unproved theory, "corticohypothalamic imbalance," to explain it. The disorder already has too many names and the necessity for a new name is not clear. It seems particularly unfortunate to rename a disorder with multiple manifestations for its cardiovascular symptoms alone. The theories of "corticohypothalamic imbalance" and "cortical recession" are rather vague and are offered without benefit of any neuropathologic examinations of either the cortex or the hypothalamus. Much is made of the idea that the patients have fever. This idea is against general clinical experience; it is poorly documented, using the statistical artefact of comparing the mean maximum temperature of the highest 11 of 30 patients with that of the whole group of 11 controls. At that, the slight difference in maximum temperature between patients and controls is not statistically significant, the significance ratio, which the author did not present, being 0.98, not significant. Giddiness in the disorder is explained by "cerebral anemia," but no data are presented to show that there really is "cerebral anemia." Excursions of the pulmonary artery, abnormal in size, were described in connection with giddiness; the method of making this difficult measurement and adequate control data are not presented. It should be emphasized that this type of neurologic and physiologic theorizing is no more valid than the vast amount of psychologic theorizing which abounds in this field. The presentation of tables and the use of some modern physiologic methods may present the uncritical reader with the illusion that all the assertions are scientifically proved. A method of treatment is recommended, but there are no adequate follow-up studies or control studies to tell us whether the patients are better, worse or the same after treatment. In general, this work does not have relevant conclusive evidence for the assertions made and gives evidence of being hastily prepared.

Retinal Structure and Colour Vision: A Restatement and an Hypothesis. By E. N. Willmer, Sc.D. Cloth. Price, $4.50; 21s. Pp. 231, with 78 illustrations. Macmillan Company, 60 Fifth Ave., N. Y. 11; Cambridge University Press, Bentley House, 200 Euston Rd., London, N. W. 1, 1946.

In this technical but interesting work the author reemphasizes the fact that there is no histologic explanation to satisfy the functional requirements of the trichromatic theory of color vision of Helmholtz and Young. This theory would require three retinal receptor elements, when, as a matter of demonstrable fact, there are only two such elements known, namely the rods and the cones. Willmer reviews the known facts, and then by modifying certain proved data, particularly the photoptic curves of Abney, he builds up a very interesting and plausible theory of color vision which accounts for many of the phenomena of color vision purely on the basis of the rods and cones as receptors. As the author recognizes, there are certain phenomena which cannot be accounted for on the basis of the thesis he has developed, particularly the central perception of blue light. To satisfy these phenomena Willmer postulated the existence of a type of rod occurring in the foveal area, anatomically not differing greatly from the cones found there, which he calls "day-rods" in contrast to the more typical rods occurring in the periphery. Because of the technical aspects of the subject and of the way it is developed, this book will not be of great use to clinical ophthalmologists. To any one particularly interested in color vision it will stand as a stimulating and thought provoking piece of work.

Practical Physiological Chemistry. By Philip B. Hawk, Ph.D., President, Food Research Laboratories, Inc., Long Island City, N. Y., Bernard L. Oser, Ph.D., Director, Food Research Laboratories, Inc., and William H. Summerson, Ph.D., Associate Professor of Biochemistry, Cornell University Medical College, New York City. Twelfth edition. Fabrikoid. Price, $10. Pp. 1,323, with 329 illustrations. Blakiston Co., 1012 Walnut St., Philadelphia 5, 1947.

A comparison of the preceding edition of this textbook with the present edition indicates a number of revisions and additions in keeping with the rapid recent advances in the field of biochemistry. The presentation of the material closely follows the pattern of previous editions of the book, in which the factual and theoretical considerations are presented, followed by laboratory tests and exercises. References are included at the end of each chapter. Among the new material presented are discussions on enzymes, isotopes, colorimetric analyses and electrophoresis. The description, diagrams and explanations of the use of modern laboratory equipment, such as photoelectric colorimeters and the Warburg apparatus, are valuable additions. The authors have increased the accuracy and scope of the material presented by obtaining the aid of a number of authorities in various phases of biochemistry. These contributors have in some cases supplied complete new chapters and in other instances have revised certain sections. The edition is a valuable reference book and one of the better textbooks. While the methods included in the book are satisfactory as laboratory exercises, they are in many cases not the methods of choice for investigational work. The book is presented in an understandable and logical manner, is well printed on good material, and will undoubtedly find much use, like previous editions, as a textbook and reference work for biochemistry.

Recent Trends in Alcoholism and in Alcohol Consumption. By E. M. Jellinck, Sc.D., Director, Section of Studies on Alcohol, Laboratory of Applied Physiology, Yale University, New Haven, Connecticut. [Published simultaneously in the Quarterly Journal of Studies on Alcohol, Vol. 8, No. 1, June 1947.] Paper. Price, 50 cents. Pp. 42, with 4 illustrations. Distributed by Quarterly Journal of Studies on Alcohol, Box 2162 Yale Station, New Haven, Conn., Hillhouse Press, 432 Temple St., New Haven, Conn., 1947.

This timely and competent study attempts to answer these important questions now in the public mind: What is the trend of alcohol consumption? What is the percentage of alcoholic addicts in our adult population? According to Dr. Jellinek, the consumption of alcoholic beverages in the population below 15 years of age is so negligible that for practical purposes it may be disregarded. On the basis of all the data and statistics now available, the consumption of alcohol rose steadily during World War II. The percentage increase in the number of alcoholic addicts is less in the female than in the male adult population. The rates of chronic alcoholism appear to be determined by unwritten social controls rather than by legal control factors. The trend of deaths from alcoholism is no index of inebriety. It reflects the progress of medicine in the treatment of this disease. As to states, the adult citizens of California consume more alcohol than do the adult citizens of North Carolina. But, curiously, the adult population of the District of Columbia tops even the people of California. In presenting this critical analysis of existing information of significant aspects of the medical and social aspects of the alcohol problem Dr. Jellinek has done a distinct service to society and to the medical profession.

Nurse-Patient Relationships in Psychiatry. By Helena Willis Render, R.N., Chief Nurse, Iowa State Psychopathic Hospital, Clarinda, Iowa. Cloth. Price, $3. Pp. 316, with 9 illustrations McGraw-Hill Book Co., Inc., 330 W. 42d St., New York 18, 1947.

This book represents a carefully prepared, well written manual intended to stimulate the betterment of psychiatric nursing care. Not only has the author done an excellent piece of work but the reading of her book should stimulate further study from the extended bibliography which is listed after each chapter. The book may profitably be read by all nurses as well as those engaged in psychiatric nursing for the reason that psyche and soma cannot be separated and every somatic case presents some psychologic manifestations just as many purely psychologic or emotionally disturbed patients may present problems of a somatic nature. As the author states, "Psychiatric nursing is not unique; the details are common to all good nursing. Yet when a patient in a general hospital becomes mentally ill, how many nurses realize that they can offer the patient everything that nurses in a hospital for the mentally ill can, except perhaps a window out of which he cannot escape?"

Radiology for Medical Students. By Fred Jenner Hodges, M.D., Professor and Chairman, Department of Roentgenology, University of Michigan, Ann Arbor; Isadore Lampe, M.D., Associate Professor, Department of Roentgenology, University of Michigan, and John Floyd Holt, M.D., Assistant Professor, Department of Roentgenology, University of Michigan. Cloth. Price, $6.75. Pp. 421, with 103 illustrations. Year Book Publishers, Inc., 304 S. Dearborn St., Chicago 4, 1947.

This excellent little volume by the senior members of the department of roentgenology of the University of Michigan is faithful to its title and should prove to be a popular textbook in this phase of medical education. American educators are coming to realize that radiology, like pathology, must be taught to all medical students, not merely to those intending to specialize in the field, though of course it does not follow that the time devoted to the subject, the teaching methods or the textbooks should resemble those in pathology. Daily contact with radiology in the wards, in clinics and on rounds is of fundamental importance, but there is a place also for a certain amount of classwork, and this textbook is aimed squarely at the needs of such classes.

The diagnostic portion does not pretend to be and is not, in fact, an atlas or reference work, but its 250 pages do provide all the didactic instruction in radiology that is really needed by the physician who is not specializing in this field. The material is presented logically, and skill has been applied to the deletion of nonessentials so as to keep the whole well within the scope of the medical student, busy though he may be with other important phases of the crowded medical curriculum.

The illustrations, which are such a vital part of any book on radiology, are reasonably plentiful and for the most part good, but they would be more helpful to the student if they were larger and if more of them carried legends. The authors' deliberate policy of using no legends and keeping each illustration as close as possible to the textual reference requires small illustrations and at best merely avoids repeating in the legends material already dealt with in the text. Actually, of course, repetition is a cardinal virtue in pedagogy and in addition legends would be conducive to "browsing," which is all but impossible with the present format.

The 150 pages on radiation therapy deal admirably with this phase of radiology, and the illustrations are provided with informative legends. This portion of the book probably will appeal not only to medical students but also to young physicians, including those just embarking on a career in radiology.

Uterine Contractility in Pregnancy: A Study of the Contractions of Pregnancy and Labor under Normal and Experimental Conditions. By Douglas P. Murphy, M.D., F.A.C.S., Assistant Professor of Obstetrics and Gynecology and Research Associate in the Gynecean Hospital Institute of Gynecologic Research, University of Pennsylvania, Philadelphia. Fabrikoid. Price, $5. Pp. 134, with 64 illustrations. J. B. Lippincott Co., 227 S. 6th St., Philadelphia 5, 1947.

The reading of this volume gives one the impression that many of the chapters were written entirely separately and were later compiled to form a book. The unique use of conclusion or summary at the end of each chapter is impressive. The many tables and graphs are prima facie evidence of the author's extensive investigation of uterine contractility. The book can be recommended for one who is interested in studying the frequency and types of uterine contractions, particularly those who may be interested in the muscular behavior of the human uterus in advanced pregnancy, prodromal labor and parturition. The uterine motility is only one important factor in labor. Consequently this publication is recommended only for its merit of basic study and not for routine clinical use.

Confrontations radio-anatomo-cliniques. I. Publiées sous la direction de M. Chiray, R.-A. Gutmann, et J. Sénèque. Paper. Price, 370 francs. Pp. 55, with 98 plates. G. Doin & Cie, 8 Place de l'Odéon, Paris 6^{e}; Masson & Cie, 120 Boulevard Saint-Germain, Paris 6,^{e} 1946.

This is the first of what is evidently intended to be a series of publications in which the editors plan to correlate the radiologic, anatomic and clinical contributions toward the solution of diagnostic problems. The title indicates the plan: (1) a brief history of the case; (2) reproduction of the roentgenograms on which the diagnosis has been based or which, as is perhaps more intriguing, have led to diagnostic error; (3) to add then the operative specimen and to discuss the case as far as it is useful in relation to the laboratory findings. The material is selected from the regular monthly medical clinics which are held under the common direction of the authors. The first volume includes a discussion of esophageal varices, diaphragmatic gastric hernia with volvulus, false aspect of gastric cancer due to perigastritis, chronic ulcerative gastritis, hour-glass stomach and other similar interesting gastrointestinal clinical reports. Of great interest are the case of syphilitic hour-glass stomach and a series of gallbladder and common duct studies. Altogether 30 cases are included in the fifty-four pages of text. The illustrations are numerous and beautifully reproduced on excellent paper. We shall look forward to future numbers in this series.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

BLOOD SUPPLY OF LUNGS AND SUSCEPTIBILITY TO TUBERCULOSIS

To the Editor:—*The theory that the standing or sitting position reduces blood flow in the upper parts of the lungs and so favors the growth of tubercle bacilli is understandable. Could you inform me what is the reason that the secondary tuberculous infection has a preference for the apical lung regions but that the primary tuberculous infection does not show this preference? In the case of childhood tuberculosis the reason can be the lesser height of the blood column in the chest; but why do we miss this preference also in the primary tuberculous infection in adults?* J. C. J. Burkens, M.D., Meppel, Netherlands.

ANSWER.—Facts have not been established to answer this question. The subject has been one of long and frequent discussion and numerous controversies. Many theories have been advanced, but they are still theories. That standing or sitting positions reduce blood flow in the upper parts of the lungs and so favors growth of tubercle bacilli is opposed by those who maintain that the circulation is better in the apex than in the remainder of the lungs and affords greater opportunity for the establishment of hematogenous infections. It is true that primary lesions may develop anywhere in the lungs of adults just as they do in children. However, although children rarely develop the reinfection chronic type of pulmonary tuberculosis, when it does occur there is a definite preference for the upper parts of the lungs. There is no known physiologic or anatomic difference between the lungs of children and adults that accounts for the localization of secondary lesions in these areas.

It has been strongly argued that the relative immobility of the upper parts of the lungs makes them more susceptible to reinfections with tubercle bacilli, as those which reach these areas emain there. The defensive mechanism has better opportunity operate where there is little movement, and therefore the isease becomes chronic. In any event, collapse procedures which reduce movement usually inhibit the progress of the disease. On the other hand, there are persons who maintain that the apexes have greater mobility and therefore more bacilli reach them through the air passages. When established, the tubercle bacilli receive more oxygen, so important for their proliferation.

Some workers maintain that tubercle bacilli are brought from the cervical lymph nodes and tonsils to the apex through lymphatics which drain these areas. Once stationed in the apexes they are retained because the lymph flow from these areas is poor.

The belief has been expressed that native or acquired resistance of the individual to tubercle bacilli is important; that is, the more resistance present, the greater the likelihood of localization in the apexes. Unfortunately, this, like all other considerations, is theoretical.

TREATMENT OF HEMOPHILIA

To the Editor:—*Having as a patient a child 3½ years old afflicted with hemophilia, I would appreciate knowing whether an effective treatment or one which even alleviates partially the condition has yet been found. Thanking you for any help you may be able to offer.*

Glen W. Tuttle, M.D., Belgian Congo.

ANSWER.—Antihemophilia fractions have been prepared from human blood plasma, which, when given intravenously in doses of 200 to 400 mg., lower the coagulation time for eight to twelve hours. This gives results similar to the injection of 100 to 150 cc. of fresh citrated human blood intravenously every twelve to twenty-four hours. The coagulation time has been reduced to normal limits by the oral ingestion of 5 cc. of neohemoplastin or similar preparations once or twice daily, or the parenteral route may be used. Some patients respond to sensitization with foreign proteins, with periodic local injections of the sensitizing substance in minute amounts intradermally (Mills, C. A.: *J. Lab. & Clin. Med.* **17**:932 [June] 1932). Ovarian or estrogenic substances, recommended by some, have not given good results in the experience of all investigators. Roentgen ray irradiation of the spleen has been used, but the possibility of deleterious remote results remains to be studied.

HEART BLOCK AND ADAMS-STOKES SYNDROME IN YOUNG WOMAN

To the Editor:—*A white woman aged 19 complains of occasional dizzy spells. She has a history of having complete heart block since birth. Her heart function has always been good. She has lost consciousness on three occasions. Examination revealed a pulse of 36 and a systolic blowing murmur over the pulmonic area about grade 1 or 2. The heart was not enlarged. Blood pressure is 130/60. Laboratory studies show a mild anemia. An electrocardiogram shows complete heart block, with a ventricular rate of 30 and an auricular rate of 50. Please advise as to whether or not complete heart block is a contraindication for pregnancy in a patient like this.* Harry Parks, M.D., Atlanta, Ga.

ANSWER.—Complete heart block under the age of 30 is exceedingly rare. It is to be attributed to one of four conditions: (1) congenital defect of the bundle itself, which is usually associated with a ventricular septal defect, (2) a residual of severe diphtheria even rarer than the congenital type, (2) acute rheumatic involvement and (4) some other infectious process of virus or other nature such as has been reported in mumps.

The presence of the Adams-Stokes attacks makes this case still more unusual. It may be considered almost unique. There does not seem to be any clear proof of an etiologic factor. It sounds as if it could be congenital despite the absence of evidence of ventricular septal defect or of other congenital abnormalities.

Complete heart block, in the absence of symptoms or important complications, is not a contraindication of pregnancy, but the occurrence of what seems like the Adams-Stokes syndrome raises a serious question.

It may be well to try the effect of ephedrine or paredrine or even atropine to see whether there may be a change in the degree of block or in the ventricular rate prior to final decision. In emergency, of course, epinephrine (1:1,000) 0.25 to 1 cc. subcutaneously, repeated as needed, is the therapeutic measure of choice in the presence of recurrent attacks of Adams-Stokes syndrome.

So far as can be determined there is no previous experience with a case just like this.

KNEE-CHEST POSITION—EARLY RISING IN PUERPERIUM —MALPOSITIONS OF UTERUS

To the Editor:—*Please discuss postpartum care with particular reference to the employment of the knee-chest position and the matter of getting patients out of bed and on their feet within twenty-four to seventy hours after delivery. There seems to be much difference of opinion about the importance of this practice in the prevention or production of malpositions of the uterus and other morbid pelvic conditions. Pavey has mentioned a series of patients who were out of bed and on their feet within a matter of hours after delivery, but his practice has included the routine placement of a pessary immediately after the expulsion of the placenta, and the pessary is left in place for six to eight weeks. Others, however, seem enthusiastic about getting their patients on their feet within twelve to seventy-two hours post partum without the supporting pessary. Because early rising of certain postoperative patients has proved helpful and practical, is it fair and safe to assume that the routine may be adopted to postpartum patients?* E. G. Puterbaugh, M.D., Tipp City, Ohio.

ANSWER.—This query discusses separate items that do not have as much relationship as might appear from the wording of the preamble to the question. These are the employment of the knee-chest position (and presumably other bed exercises), early rising of puerperal patients and malpositions of the uterus.

The chief medical reasons for bed exercises are to improve circulation as an aid in avoiding phlebitis and to improve the tone and condition of overstretched abdominal muscles.

Titus (Management of Obstetric Difficulties, ed. 3, St. Louis, C. V. Mosby Company, 1945) says "It has been customary to recommend that the knee-chest exercise as a preventive of uterine misplacement is to be begun on the seventh day, although according to Eichner this is not really effective until during the third and fourth weeks of the puerperium. I agree with his view of this because of the fact that the uterus impinges against the promontory of the sacrum until at least the third week and thus is prevented from assuming a position of retrodisplacement before this time. Moreover, it may have serious consequences, as Redfield and Bodine have reported instances of air embolism following this exercise in the early days of the puerperium."

Early rising from bed, followed soon by discharge from the hospital, was begun as a wartime necessity to effect a more rapid "turnover" in crowded maternity divisions of hospitals. It was justified on the grounds of the reported good results, especially in avoidance of phlebitis, obtained by surgeons with postoperative patients ordered out of bed within twenty-four to forty-eight hours after various major operations. Many hold the opinion that this course for both types of patients is an extreme swing of the pendulum that will presently adjust itself to a more conservative midpoint.

Early rising of puerperal patients has now acquired some medical virtue, because it does not seem to have had ill effects, pelvic disorders and uterine displacements did not increase noticeably, general muscle tone did seem to be restored more promptly, and perhaps the incidence of phlebitis was diminished; moreover, the obstetric divisions of hospitals are still overcrowded!

The procedure of inserting a pessary immediately after expulsion of the placenta, referred to in the query, does not appear to be good obstetric practice and could reasonably be blamed as a foreign body carrier or excitant of puerperal infection happening in any such patient. This is too much like using a crutch for fear of becoming lame.

In direct reply to the question, it is safe to assume that reasonably early rising from bed after delivery is a proper procedure for the average, normal puerperal patient.

COPPER SULFATE METHOD OF MEASURING HEMOGLOBIN

To the Editor:—Regarding the copper sulfate specific gravity method of determining the blood hemoglobin: Do any factors other than hemoglobin content influence the results to an appreciable amount? Is there any known correlation between the behavior of the drop and the blood level in grams which would enable one to obtain the equivalent in grams?

M.D., Ontario.

ANSWER.—The description of the copper sulfate method for measuring specific gravities of whole blood and plasma should be studied carefully (Philips, R. A.; VanSlyke, D. D.; Dole, V. P.; Emerson, Kendall, Jr.; Hamilton, P. P., and Archibald, R. M.: *Bull. U. S. Army Med. Dept.*, December 1943, p. 66. Simmons, J. S., and Gentzkow, C. J.: Laboratory Methods of the United States Army, ed. 5, Philadelphia, Lea & Febiger, 1944). If the solutions of copper sulfate are prepared carefully, factors other than hemoglobin content in a whole drop of blood do not appreciably influence the estimation of the amount of hemoglobin in normal blood by this method. There is a correlation between the specific gravity of the drop and the amount of hemoglobin as expressed in grams per hundred cubic centimeters. For accurate estimations the authors advised the measurement of both whole blood and plasma or serum. However, they also maintained that useful information can be obtained from the specific gravity of the whole blood alone by using the average normal figure of 1.0264 as the value for the specific gravity of the plasma. There will be considerable error at times if this procedure is followed in pathologic conditions. In fact any laboratory equipped to carry out this method probably also will have apparatus for some other accurate method for the determination of values of hemoglobin.

AURICULOVENTRICULAR BLOCK IN MIDDLE AGED WOMAN

To the Editor:—A woman aged 46 is suffering with a complete heart block. The condition began about eighteen months ago, when her pulse rate was between 50 and 60. She felt fairly well until July 1946, when she suddenly fainted. Examination revealed a pulse rate of about 42. She began suffering with syncopal attacks for a period of about six weeks. The volume of the pulse was not regular. An electrocardiogram showed a heart block. She was given ephedrine and amphetamine preparations without apparent results. Epinephrine solution seemed to improve the syncopal attacks. On one occasion, for three days about six hours a day her pulse rate was 55 at irregular times. Since then she has been up and getting around more but her pulse rate has been gradually getting less. For the past five to six weeks her liver has begun to enlarge (chronic passive congestion). She has been taking digitalis and resting more. There seems to be some slight decrease in the size of the liver, but her pulse rate is now 23 beats per minute. The tendency seems to be downward all the time. Her weight was originally around 200 pounds (91 Kg.). She now weighs 150 pounds (68 Kg.). The etiology is apparently unknown. If there is anything known with reference to a possible improvement in the condition of the heart block, please let me know.

M.D., New York.

ANSWER.—Auriculoventricular block developing in a middle aged woman is uncommon in contrast to its occurrence in the other sex. However, in either male or female the etiology is probably coronary atherosclerosis. Less likely are such possible causes as syphilis, diphtheria, rheumatic fever or infection of other and more obscure nature. Still rarer, however, are the remote possibilities of intracardiac tumors, primary or secondary, infestations of the heart as in trichiniasis, trauma, and amyloid or other unusual diseases. However, each one of these possible causes must be thought of, and in her case with the loss of weight and vagueness of other causation cancer must be considered.

Treatment of high grade auriculoventricular block with Adams-Stokes attacks is the use of epinephrine hydrochloride 1:1,000 solution 0.25 to 1 cc. subcutaneously as often as needed. Ephedrine, amphetamine, paredrine and atropine are much less likely to be of value.

EVENTRATION OF DIAPHRAGM OR HERNIATION OF STOMACH

To the Editor:—A man aged 43 weighs 175 pounds (80 Kg.) and is 5 feet 11½ inches (181 cm.) tall; he complained for several months of persistent sticking pains in the precordium. This is not related to exercise, food intake, time of day or posture. The electrocardiogram shows regular rhythm and rate. The PR interval is 0.12. Comment on the electrocardiogram is "no definite diagnostic pattern." The general physical condition is good and there is no dyspnea or edema. Blood presure is 138/80. X-ray eventration with pronounced elevation of the left diaphragmatic dome is fully three intercostal spaces above the average normal; there is moderate gaseous distention of the hollow viscera thereunder. This elevation is also responsible for a rotation and displacement of the heart toward the right, thus being responsible for disturbance in relative measurements, the deviation to the right being proportionally greater than that to the left. Otherwise gross abnormality in cardiac contour is not discernible. The conclusion is that there is pronounced eventration of the left diaphragm with the heart rotated and displaced to the right. (The heart contour is apparently normal in consideration of the displacement.) Slight root branch thickening is present; the lung fields otherwise are clear. With repair of the diaphragm, what is the prognosis for relief from cardiac symptoms, and what of mortality in operation?

M.D., New Jersey.

ANSWER.—Herniation of the stomach, with or without other abdominal organs, through the diaphragm into the chest occurs far more frequently than eventration of the diaphragm. Fluoroscopic and roentgenographic barium studies of the esophagus, stomach and, if necessary, colon should be made in various projections in order to determine whether the elevated "diaphragm" is actually the diaphragm or herniated stomach or bowel. Surgical correction of either a diaphragmatic hernia or an eventration of the diaphragm would almost certainly cause the heart to return to its normal position and should stop the precordial pain. The mortality rate for either operation should not exceed 5 per cent if it is performed expertly by a surgeon thoroughly familiar with intrathoracic surgery. The operation for diaphragmatic hernia is, however, often performed by the abdominal route.

VENTRILOQUISM

To the Editor:—What is the mechanism of phonation in ventriloquism? Is the theory that the sound is produced using the inspired air stream correct? Some professional ventriloquists feature the ability to continue their "dummy" voice even while smoking a cigaret and, more dramatically, while drinking a glass of water. By what means is this done, particularly that of speech while drinking water?

M.D., Missouri.

ANSWER.—The art of ventriloquism was known to the ancient Egyptians and Hebrews according to archeology but derives its name from the Latin (venter—the belly; loqui—to speak) on the erroneous supposition that it came from a peculiar use of the stomach during the process of inhalation. In reality, the words are formed in the normal manner but with immobility of the visible muscles concerned with speech. The breath is allowed to escape slowly and the tones are muffled by narrowing the glottis, keeping the mouth closed as much as possible with the tongue retracted, and only its tip in motion. This pressure on the vocal cords diffuses the sound and gives the illusion of distance. The use of gestures and other contrivances to divert the attention of the listener is highly important. The art is in keeping the lower jaw immobile and diverting the attention from the speaker to his dummy and other props.

HYPERVENTILATION IN NEUROCIRCULATORY ASTHENIA

To the Editor:—I have a cardiac patient whose symptoms are caused mainly by hyperventilation. Please discuss treatment. I cannot find any adequate discussion in the literature.

M.D., California.

ANSWER.—Hyperventilation is a frequent symptom of neurocirculatory asthenia, which in turn is a symptom complex sometimes called effort syndrome, the soldier's heart and anxiety neurosis. At one time it was thought that hyperventilation alone was the cause of neurocirculatory asthenia. It is certainly an aggravating factor and produces new symptoms itself, of which the chief one is faintness.

For many years it has been known that sighing respiration has been a common manifestation of neurocirculatory asthenia. Another manifestation of respiratory abnormality is hyperventilation. Hyperventilation, of course, acts primarily through the production of respiratory alkalosis with high p_H and low pCO_2. Although it may occur in other conditions, its most common spontaneous occurrence clinically is that with neurocirculatory asthenia. Prolonged periods of hyperventilation also appear frequently in women with hysteria and in patients with severe encephalitis.

Treatment of this common type of hyperventilation is largely a matter of instruction and training to avoid the procedure itself.

It is often possible to do this by adequate coaching and by pointing out to patients that some of the symptoms are merely results of breathing too fast. Simple awareness of this fact seems to cause the symptoms to lose their frightening quality. There should be treatment also of the neurocirculatory asthenia itself.

OBESITY

To the Editor:—A woman aged 30, married and with 2 children, was very thin as a child but after puberty suddenly began to gain weight rapidly, reaching a weight of 290 pounds (132 Kg.) at the age of 20 years. She has been on a diet and has taken thyroid up to 2 grains (0.12 Gm.) three times a day and amphetamine 5 mg. three times a day for some time but has not been able to lose weight. The basal metabolic rate is — 8. At a previous hospitalization she was told by an endocrinologist that she had a pituitary type of obesity. I would greatly appreciate any information you could give me concerning the treatment of this type of obesity. Abraham B. Sand, M.D., Burlington, N. J.

Answer.—There is little, if any, basis for the diagnosis of "pituitary obesity" in modern endocrinology. Such changes in weight as accompany proved lesions of the hypophysis are always in the direction of loss of weight. It is known, however, that diseases of and physical or psychic trauma to the hypothalamus may result in obesity. When it does, it follows increased appetite. Hence the treatment of this type of obesity is similar to that of any other type of obesity in which no specific glandular deficiency can be remedied by specific endocrine therapy. That is, the intake of calories in the form of food must be reduced below the calories expended as energy. Considering the thyroid medication the patient is getting and the basal metabolic rate, one may be certain that she is not adhering to whatever reduction diet she is supposed to follow.

TETANY OF THE NEWBORN

To the Editor:—Are there contraindications to the use of intravenous calcium in tetany of the newborn? If so, what are they and what is the explanation for fatalities that have been reported?

Harry W. Orris, M.D., New York.

Answer.—According to pediatric textbooks there are no contraindications to the use of intravenous calcium in tetany of the newborn. It should, however, be given only as calcium gluconate in amounts of 5 to 10 cc. and in a 10 per cent solution. But it is doubtful whether tetany of the newborn, so called, is really a disease. It is rather a symptom complex, as cures have also been reported with dihydrotachysterol. It must always be remembered that in the frog's heart calcium ions when present in quantities above normal or when in a proportional excess over sodium and potassium ions will cause a condition of tonic contraction that has been designated as calcium rigor.

REJOINING VAS DEFERENS AFTER SEVERANCE

To the Editor:—With what degree of success can the vas deferens be rejoined after operation for sterilization? Would vitallium in the form of tube or foil, with or without thromboplastin (Parke, Davis & Co.) be of aid in the technic? M.D., Iowa.

Answer.—Before an anastomosis is attempted, an ejaculated specimen should be examined for spermatozoa because spontaneous recanalization is a possibility. Success in repairing a vas deferens cannot be obtained after a properly performed operation for sterility in which a liberal section of vas is excised. An epididymovasostomy would be the operation of choice. At best, this procedure is successful in not more than 5 per cent of cases. Since the lumen of the vas measures only 0.5 mm., it does not seem possible that anything other than a fine wire could be employed in reconstructive surgery.

LONG CONTINUED ADMINISTRATION OF TESTOSTERONE PROPIONATE

To the Editor:—A man aged 53 has been receiving testosterone propionate 10 mg. twice weekly for the past six months, claiming a sense of well being. He requests continuation of this therapy. Is there any danger in the continued administration of this hormone? M.D., New York.

Answer.—There is little danger attending the continued administration of 10 mg. of testosterone propionate twice weekly. The use of larger doses according to Grollman (Essentials of Endocrinology, ed. 2, Philadelphia, J. B. Lippincott Company, 1947, p. 491) may be accompanied occasionally with distressing symptoms—dyspnea, chest pain, palpitation and edema of the lower extremities—which require the cessation of therapy.

INSOMNIA

To the Editor:—A woman aged 49 has completed her menopause and is symptom free. Since 1930, when she had a spinal fusion done, she has suffered from insomnia. Almost continuously she has taken barbiturates and for the past five years has used 3 to 4½ grains (0.2 to 0.28 Gm.) of seconal nightly. A real addiction is now present. Her home life is happy and she has no worries of any kind, except the worry of sleepless nights. She has consulted numerous medical men, and the net result in each case was more barbiturates. Physical examination is completely negative. Can you suggest a new method of approach to this problem?

Daniel B. Lynch, M.D., Albany, N. Y.

Answer.—The first thing to make clear to both the doctor and his patient is that a medicinal dose of the barbiturates taken at night to induce sleep, even to the degree of 3 or 4½ grains of seconal, will not prove harmful to her general health. It would be much better for the patient to take this medicine regularly than for her to worry each night at bedtime. Without knowing the patient, it is less easy to suggest a future line of treatment. Possibly the services of a man experienced in the technic of hypnosis would help this patient.

ENURESIS IN YOUNG WOMAN

To the Editor:—Would you please discuss the diagnosis and treatment of enuresis in a woman aged 17 years who is otherwise perfectly normal, as far as I can determine. I have heard that there is some new drug therapy for this condition but I have not been able to find it.

Clement H. Arnold, M.D., Palo Alto, Calif.

Answer.—Included in the study of enuresis there must be thorough investigation of the urinary tract, genital tract, vertebral column, neurologic system and metabolism and possibly psychologic study. Assuming that all these examinations are normal, there are a few drugs that may be used. Some rather empirical treatments can be given in addition to the drugs. The most commonly used drug is ephedrine, which, being a sympatheticotonic drug, tends to reinforce the internal sphincter. Paradoxically, atropine-like drugs are often prescribed to reduce the sensitivity of the internal sphincter. Urethral dilations and the instillation of silver nitrate solutions are adjuncts to the drug therapy.

BACILLURIA WITHOUT PYURIA

To the Editor:—I have had several cases of Escherichia coli bacilluria without pyuria. What explanation can be offered for this, assuming that the bacilluria is not a contaminant? Also what is the probable source of the infection—hematogenous or ascending?

Harry W. Orris, M.D., Bronx, N. Y.

Answer.—Escherichia coli is found not infrequently in the catheterized urine without pyuria in chronic urinary infection. In such cases the infection usually is in a dormant stage, and a state of comparative immunity may have been established. Cases of bacilluria without pyuria may be divided into three groups: those in which bacilluria is found (1) in the bladder urine only and not in the renal specimens obtained by means of ureteral catheters, (2) in one or both catheterized renal specimens only, and (3) in both the bladder and renal specimens. In the latter group the absence of pyuria would be quite rare in repeated examinations. Bacillary infection in the urine usually is of the ascending type, although in some cases it may be hematogenous.

REATTACHMENT IN IRIDODIALYSIS

To the Editor:—A soldier aged 22 sustained a shrapnel injury in 1944. He received a traumatic iridotomy or iridodialysis over a distance of about 6 mm. in the left eye. While I have never seen a reattachment of the iris base over so extensive an area, I have succeeded in reattaching it, so that the eye is now perfectly normal. Are there any cases of such reattachments on record? I. J. Cooper, M.D., New Brunswick, N. J.

Answer.—Four cases of reattachment in iridodialysis were reported by Jameson. The area of separation was 8 mm. in the first case. No mention of the extent of the lesions in cases 3 and 4 was made. Key reported 2 cases which were surgically repaired. Each involved approximately one fourth of the basal attachment of the iris. Repair of the defect by incarceration of a tiny shred of iris within a small keratome incision, without use of sutures, was advocated by Wheeler. Spaeth discusses repair employing sutures.

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The Journal of the
American Medical Association

Published Under the Auspices of the Board of Trustees

Vol. 135, No. 2 — Chicago, Illinois — September 13, 1947

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THE PRESTIGE OF OPHTHALMOLOGY

Chairman's Address

DERRICK VAIL, M.D
Chicago

To those who devote their professional lives to ophthalmology it is a most pleasant, exciting, interesting and absorbing field. The rewards in the happiness, gratitude and satisfaction of patients more than repay the ophthalmologists' efforts. From a humanitarian point of view it is one of the most valuable of all specialties. It is also one of the most important branches of medicine, affecting the economic welfare of the people. Those engaged in it are jealous of its prestige, but have been too busy, too self-contained, too interested in their own work and the good that they are doing to bother much about the prestige of ophthalmology. This is the correct attitude; it is only correct, however, if it is not carried too far, and it is now time to halt a bit and look around. The opportunity to present some thoughts on this subject to fellow members of the Section on this great occasion is too good to pass by.

I had the experience during the war of meeting as comrades and on common ground many experts in other fields of medicine. The experience was invaluable from many points of view, but it awakened me to the fact that ophthalmology was held in pretty low esteem by my colleagues, at least until the battle casualties began to roll in; then the ophthalmic surgeon came into his own. Those who served with various units of the Armed Forces will, I am sure, bear me out in this contention, for they must have endured, at least early in the war and perhaps all through their experiences, the feeling that ophthalmology was relegated to an extremely minor position in the overall set-up. In fact, it was not unusual for the commanding officer or the chief of surgical service to designate any unassigned officer as the eye physician or to tell the straight ear, nose and throat officer to do the eye work or, what is still worse—and it happened fortunately on but a few occasions—to turn over all the eye work to an optometrist. To be entirely fair, there were perhaps extenuating circumstances under conditions of stress to be found in the local situation in some places.

At the meeting of the British and American Army Consultants, which was held in Paris Oct. 14, 15 and 16, 1944, I was allowed but five minutes in which to present the problems of war ophthalmology and that at the very end of the meeting. I had listened for several days to a discussion of general surgical problems, many hours of which had been devoted to the relative value of the Tobruk versus the Spica splint for fractured femur. Finally, my turn came. Somewhat exasperated, I said: "Many of the hospital commanders and chiefs of surgery are not particularly interested in ophthalmology, unless they happen themselves to have an eye disease or injury, and then they want the best care possible." This statement got a laugh, but it also got the support of the distinguished guest of honor here today, Brigadier Sir Stewart Duke-Elder, then chief consultant in ophthalmology to the British Army. Sir Stewart said: "There is one point I wish to stress very emphatically. It reverts to the question of priorities again. At the beginning of the discussion today, the surgeons decided that a suitable definition for surgical priorities could be defined as 'life-and-limb-saving.' It may be argued whether it is better to die or be blinded, but I should think that there are few; myself included, who would not prefer to lose a limb then their vision. I would therefore suggest that for 'life-and-limb-saving,' then, should be substituted 'life-vision-and-limb-saving.' It should be remembered that eye casualties comprise some 4 per cent of the total casualties of war, and I think there is a tendency for the general surgeons who control the policy of surgery in the field, to forget this, or alternatively, to treat it as a side issue." That was a rather potent statement, with good results, for from then on ophthalmology was not quite the side issue that it had been.

It was not until two months before D-day that a chief consultant in ophthalmology to the surgeon general was appointed. Before that time many ophthalmic problems had been crying for solution, many costly mistakes had been made in loss of valuable time and in supplies and equipment, as well as in misplaced personnel. After that things were better, but it was almost too late. The Navy never did have a chief consultant or advisor in ophthalmology. This was because the planning policies were in the hands of the general surgeons, who had no interest or special knowledge in ophthalmology and its peculiar functions.

This feeling of my medical and surgical colleagues in the services that ophthalmology was a minor specialty, a side issue and of relatively small importance is one that is met with today in civilian life. Along with this indifference and in some cases ignorance of fellow physicians is the confusion in the public mind on what ophthalmology is and how it differs from optometry. I won't say that the prestige of this specialty is lowered particularly as a result, but at least it is actively shared

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Read before the Section on Ophthalmology at the Ninety-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., June 11, 1947.

by a nonmedical group, with the result that all who work in this field are, in the minds of the uninformed, "eye doctors." This would be laughable if it were not so serious to the patients, in consideration of the time spent and in the quality of the differences in the training of the ophthalmologist and the optometrist. This specialty is not entirely alone in the sharing and diluting of its hard-won prestige, for in the mind of the public the psychiatrist has as his rival the pseudopsychologist or lay psychoanalyst; the orthopedic surgeon, his bone setter, osteopath or chiropractor; the physician, his naturopath and so on. This fringe, some of it lunatic, of nonmedical practitioners has always been attached to the physician's robe and has had some soiling effect on it. But what should and does concern the ophthalmologist most is the ignorance about his specialty observed in fellow physicians and the indifference they often show to his special knowledge and work. Some of the factors that I believe are responsible for this decrease in ophthalmologic influence are (1) exclusiveness and withdrawal from the general medical field; (2) exclusive and hidden work which is obscure, that is to the average general physician, and performed in special eye hospitals and pathologic laboratories; (3) the eye, ear, nose and throat specialist, who is poorly qualified in ophthalmology; (4) the optometrist; (5) rebates; (6) the gradual loss of part of the territory or field of endeavor of the ophthalmologist and of his responsibilities to the neurologist, neurosurgeon and plastic surgeon; (7) little or no representation in the controlling membership or councils of the major medical and surgical organizations (this is directly related to the first factor), and (8) spectacular publicity.

Reasons for decrease in ophthalmologic influence:

1. Exclusiveness and withdrawal from the general medical field: There is no doubt that this is true and has been evolved in direct proportion to the technical growth of the specialty. The general medical interests of the ophthalmologist have become narrower as time has gone on. Ophthalmic problems today require more skill, more diagnostic acumen, more instrumentation than ever before. If one will but compare the office practice of ophthalmology today—necessitating as it does refraction, perimetry, slit lamp biomicroscopy, tonometry, muscle studies, ophthalmoneurologic investigation, laboratory tests, ophthalmoscopy, the maintenance of careful records and so on—with the practice of a busy oculist of forty years ago, who was able to see twice the number of patients in half the time, it can readily be seen how much more complicated, and rightly so, this work is today. This sort of thing saps one's energies over a period of time, until it is no longer possible to see the forest because of the trees. Such is the demand for service from all sides, that even the new exresident soon finds himself taxed with ophthalmic work to the fullest extent of his time and ability. He thus tends to lose interest in the broader aspects of his profession as a physician and to lose touch with those colleagues, who have so much to teach that will benefit his patients, and to whom he could teach so much that would benefit theirs. The solution lies in a realization of the rut that one is in and in the devotion of more time and effort as an individual to the wide general medical interests of a true physician. The ophthalmologist must sell himself and his special skills to his general medical and surgical colleagues, not for any ulterior economic purpose but for the welfare of the medical profession as a whole.

2. Work in special eye hospitals and the laboratories of eye pathology: Special eye hospitals are not as frequently found today as they used to be. I have in mind particularly the small private eye hospitals and clinics that were relatively common in the past. The modern trend, which is wise, is to develop a satisfactory eye department in a general hospital or a special building in a center. More of this needs to be done, for the ophthalmologist must rub elbows with other physicians in his daily work and not hide his light under a bushel or fail to see theirs.

The study of ophthalmic pathology of its very nature is an ultra specialty. It requires special equipment, technics and knowledge. The average general medical pathologic laboratory is entirely unsuitable to turn out the exceedingly fine work that is needed in this specialty. Therefore the ophthalmic departments in medical schools and hospitals have been forced to develop their own laboratories. This need not be so. Ophthalmic pathologic procedures should be a part of the work of the general medical laboratory, and it is up to the ophthalmologist to educate the general pathologist to this way of thinking if he will but listen. He should, for it is to his advantage as well to have all of this work together.

3. The Eye, Ear, Nose and Throat Specialist: Eighty per cent of the members of the Academy of Ophthalmology and Otolaryngology have an eye, ear, nose and throat practice. This group, therefore, is far from being extinct. There is an obvious need for their services, especially in the smaller communities. However, it is sad to relate that many of them are better qualified by training and board examination to do ear, nose and throat work. They are satisfied for the most part with certification by the Ear, Nose and Throat Board, which gives the membership in the Academy. From then on further training in ophthalmology is casual and secondary. Few seek additional certification by the Board of Ophthalmology. These statements are supported by war experience and the records of the American Board of Ophthalmology. The solution lies i insisting that these men have a satisfactory trainin or at least opportunities for such training in the fiel of ophthalmology. There is no more certain way t lose ground with one's colleagues than through poo quality of work.

4. The optometrist: Legally entitled to practice hi technic, the optometrist is here whether one likes it o not. There is a fact that all must face: he is als protected by the legal definition of the practice o optometry in each state against the failure to recogniz a pathologic process with the eye. In spite of this lega protection of nonresponsibility he claims this power o diagnosis publicly and makes much of his competenc to recognize ocular disease. It is well known from daily experience that such competence is not the case. Many examples of this morally criminal though entirely legal lack of responsibility on the part of the optometrist can be demonstrated by every ophthalmologist. The optometrists as a whole have done everything in their

power by advertisements of the most blatant type, which assail the ear and eye night and day, to confuse and mislead the public into believing that they are eye physicians or by calling themselves eyesight specialists to claim to practice a profession having to do with all ophthalmic care. This has been going on for a long time. Therefore it is not surprising that the public should not know the difference between an ophthalmologist or an oculist, and an optometrist. What is surprising and shocking, however, is that junior and senior medical students and even physicians often do not know the difference. In fact cases are known in which a physician has referred a patient to an optometrist for an ophthalmoscopic consultation and opinion. I repeat that the ophthalmologist is at fault for the existence of such ignorance among his medical colleagues.

One must face the fact, too, that there are simply not enough ophthalmologists to go around. Eighty per cent of the persons seeking an ocular examination go to the optometrist. Of these 80 per cent it is presumed on good grounds that 30 per cent have some ocular disease. How many of these cases are missed by the optometrist it is impossible to say, although the figure must be impressive. But even if every one of these persons had sought out the ophthalmologist, the work could never have been accomplished by the small number of such specialists available. It is not a question of economic rivalry, therefore, that has led to the bitterness between the two groups, for each group has more work to do than can be done properly. Rather, it is the effort of a nonmedical group to enter into a professional field that disturbs those who are also physicians.

How then is the average person, the common man, to be protected against losing his sight as the result of nonrecognition of his ocular or general disease? I see no solution to this problem in the immediate future.

For the long run, however, I should like to consider the following suggestions: First, the ophthalmologist must take a more active part in instructing this nonmedical group in the recognition of ocular pathologic processes. This does not imply that the optometrist must be taught definite diagnosis, for I believe this to be impossible because of his lack of medical training. But I do believe that he can be taught to recognize that something is wrong and, what is more important, that he can be impressed with the moral necessity of seeing that such a patient consults an ophthalmologist, which he has been loath or reluctant to do up to the present. The teaching of the optometrist by the physician is a practice that has gone against the grain, but it is a sworn duty to protect the patient, and this responsibility must be carried out. There are some who say, "Ignore the optometrist entirely, but educate the people to seek proper eye care." This should be done too, of course, but the members of the medical profession have hitherto been reluctant to go deeply into this matter. The dear public has to have its head hammered at repeatedly in order to get any message through, no matter how right or beneficial the message may be; and the lower class of optometrists, the more numerous and noisy group, have succeeded in hammering in their message to the detriment of the people. The first thing, therefore, is to curb these unscrupulous optometric advertisers, the neon sign, jewelry store and department store artists.

This leads to the second suggestion. It is to support that small but intelligent group among the optometrists themselves, who are working and striving to elevate the ethics, standards of education and sense of duty to public welfare among their own colleagues. The blatant newspaper, radio and neon sign advertisers are repugnant to them as well as to the ophthalmologists. This group is valiant and deserves active support, for in no other way can the advertiser be driven from the field of refraction care of the public. The medical group cannot possibly accomplish this; its members have neither the time nor the legislative talents nor even the interest to attempt this by themselves. But each as an individual must seek the aid of the special ophthalmic societies and particularly the major medical societies, such as the American Medical Association, to take part in this campaign. It is a matter of expediency, for the ophthalmologist agrees with the more enlightened optometrist that the advertisers must go. Third, physicians must seek all means and measures at their command to have the title doctor reserved for doctors of medicine; the term eye doctor or eyesight specialist must be legally banned to the optometrist. This has already been done in some states. Should the optometrist succeed in the future in persuading some reputable university to put a school of optometry into its faculty and curriculum (which, incidentally, has not occurred since 1925) physicians must see to it that the degree of doctor is not granted to the graduates in optometry.

The public, too, must be educated, if at all possible, which I doubt, to know the difference between the doctor of medicine and the so-called doctor of optometry. Finally: Legislation must be sought that will hold the optometrist legally responsible for his diagnostic errors and see that he is subject to the same court of malpractice.

It has been demonstrated in the Army and Navy that optometrists and ophthalmologists can work side by side peacefully for their mutual advantage and to the advantage of the patient as well. It is therefore not inconceivable that this teamwork can be carried over into civilian life and it is to this end that all must work. For, I repeat, optometry is here and legally entitled to stay, and it is the function of medicine to absorb it, if man is to be protected and taken care of.

5. Rebates: Nothing can be said in extenuation of the widespread evil of optical rebates. It cannot be defended on ethical, moral or even economic grounds. It is a blot on ophthalmologists as professional men. They must repudiate the practice with all their strength. It is a cancer to their prestige. They have lowered themselves in the eyes of their medical brethren and in those of the persons who are aware of it. It cannot be hidden by subterfuge, and if they do try to do so, they are playing directly into the hands of the commercial firms and optometrists to the detriment of themselves and to the harm of their patients. The solution of this evil is to have none of it but to charge fees that are right and proper for the great service which is rendered, and to let the world know that rebates are not accepted.

6. The gradual loss of part of the territory or field
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surgeon: Here again it i n fau ese

fields ophthalmologists have not made good as a group, and it must be remembered that there is no monopoly on the experienced use of the ophthalmoscope and perimeter or the neurologic examination of the eyes. The perimetric examination is slipshod and haphazard, the knowledge of neuro-ophthalmology is casual and scanty and the practice of it is worse; the ocular specialist has even failed to convince the neurosurgeon that he can excel him in ophthalmoscopic examinations.

As a group the specialist in this field has backed away from ophthalmic plastic surgery and has done little to train residents. The solution lies in more and better training in order to offer convincing proof that the ophthalmologist knows more about neuro-ophthalmology than does the neurologist and that he can do better plastic repairs of the lids and adnexa than can the plastic surgeon.

7. Little ophthalmic representation in the general medical and surgical groups: This lack of representation is a sad truth. Ophthalmology has gradually been frozen out, so that if it is considered by the councils at all, it is apt to be as an afterthought. The cause of this lies within and is connected with the aloofness of this specialty from general medicine and surgery. The cure is to take more active part in the affairs of general medical practice.

8. Spectacular publicity: Recently ophthalmology has experience a spate of spectacular and notorious publicity that in the end is harmful to its prestige. It almost seems as if there is an epidemic of publicity. Lord Horder of Great Britain, the great physician, has said, "One cannot have prestige without a certain amount of publicity, but you can have a large amount of publicity with very little prestige." It is the duty of ophthalmologists as individuals and as a group to control publicity that is spectacular and harmful, first to the patients and in the end to the physicians. The leaders in particular must be ever watchful against this pernicious seduction, for if they fall for the siren, who shall blame the younger man in whom lies all of the hope and faith and confidence for the future of ophthalmology? It takes a stern hand and even disciplinary action to stamp out. It can be controlled best only by the individual, for it is in his power to refuse press interviews that violate the confidence of the patient or to refuse medical care to the patient who does not conform to his wishes in regard to publicity or to discharge the employee who gives back-door information to the press. There can be only one guiding question asked of proposed publicity, "Is it harmful to the general good, to the individual patient or to ophthalmology?" The ophthalmologist must never permit himself to be intruded into the picture.

Recently, too, there has been medical publicity that is tinged with a political or subversive taint, the promotion of a discovery not for its merits but because of a national ideology. This is dangerous not only because the discovery may be found not to have merit and publicity may thus lead to ridicule of the responsible group or agent, but more seriously because medicine and medical discoveries must be universal and free of any tie to political propaganda. In other words, a discovery must be tested on its own merits and neither supported nor condemned because it bears an ideologic tag. One must fight against such inroads into the freedom of thought to the utmost of one's strength.

Ophthalmology deserves the love and respect of those who practice it. Devotion to this specialty is repaid magnificently and in many ways. One must be ever jealous to protect its honor, nobility of purpose and prestige.

700 North Michigan Avenue.

POLIOMYELITIS

HART E. VAN RIPER, M.D.
Medical Director, National Foundation for Infantile Paralysis
New York

Prior to 1870 poliomyelitis occurred only as a sporadic disease of the very young child. During the 1870s in Europe, the 1880s in Scandinavia, the 1890s in the northern part of the United States and the 1930s in the southern part of the United States poliomyelitis took on a new character—occurring in epidemic proportions. The reason for this transition from a sporadic to an epidemic disease is unknown, but of particular interest is the fact that with this transition there has been a gradual increase in the average age of the persons afflicted.

There is recent evidence to support this historical belief that such changes are part of the pattern of the disease. At the present time this evolution seems to be occurring in the larger metropolitan communities of Osaka and Kobe in Japan. During 1938 and 1940 these urban areas experienced for the first time severe epidemics of poliomyelitis, most of the cases appearing in the very young children.

The period of evolution from sporadic to epidemic poliomyelitis corresponds roughly with the institution of widespread measures for improved sanitation. This interesting coincidence has led to the hypothesis that the virus is more widespread in areas where the sporadic disease predominates, making possible frequent exposures of the young infant to virus during the time when he still retains a high titer of passive immunity from his mother. Exposure to the virus under these conditions would surely stimulate further resistance to poliomyelitis and only occasionally result in the production of the frank disease. This theory might explain the infrequent cases of poliomyelitis in young children as they occurred in the early history of the disease in Europe and the United States. But, in regions where epidemics predominate, people are exposed to the virus less frequently and at a later period in life, when they have lost all or most of the passive immunity acquired from the mother. Thus there results a greater chance for the development of frank disease among older age groups rather than an increased resistance.

PORTALS OF ENTRY

Knowledge as to the possible portals of entry has been acquired through the study of characteristic lesions of poliomyelitis found in ganglions of certain cranial and peripheral nerves and has been offered as suggestive evidence of the path by which the virus has invaded the brain and spinal cord. Studies on experimental animals have indicated that such lesions in the sensory ganglions may result from a centrifugal spread of the virus following inoculation of the virus directly into the brain. Even though the weight of evidence in the

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Read in the General Scientific Meetings at the Ninety-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., June 10, 1947.

majority of cases indicates that the portal of entry is by way of the alimentary tract, it is recognized that in at least a fairly large number of cases the infection may have been via the peripheral nerves of the mouth and throat regions.

TRANSMISSION OF THE DISEASE

Many authorities believe that the greater majority of poliomyelitis infections are transmitted by intimate contact between a susceptible person and some one harboring the virus. The "some one harboring the virus" need not necessarily present clinical symptoms of the disease; indeed, there is considerable reason to believe that for every diagnosed case of the disease there may be approximately 100 symptom-free persons harboring the virus.

The fairly frequent recovery of poliomyelitis virus from feces, sewage, sewage disposal plants and flies has raised the question whether the transmission cycle may be from feces or sewage to flies, to man, with the possibility of an intermediate carrier—food. That an occasional case of the disease may be acquired by this route seems reasonable, but studies of many epidemics indicate that most cases of the disease are transmitted primarily through intimate contact.

THE RELATIONSHIP OF ANTIBODIES AND RESISTANCE TO THE DISEASE

The mechanism of immunity has perplexed investigators, because it is not unusual to find that the disease sometimes occurs in persons who have a high titer of serum antibodies; that persons recovering from a paralytic attack of the disease frequently do not show an increase in the titer of these antibodies, and, further, that monkeys recovered from a paralytic attack of the disease often show little or no serum antibody but do exhibit pronounced resistance to intracerebral injections with the same strain of virus. The general conclusion to be drawn from these apparently contradictory observations is that no relationship exists between humoral circulating antibodies and resistance to poliomyelitis.

Unfortunately most of these studies have been determined with respect to the Lansing virus, and there is no proof as yet that this virus is of great importance in the clinical disease or that the persons studied actually were infected with this strain of the virus.

Investigations designed to produce a vaccine are most intriguing and are being continued. It has been found that the monkey convalescent from a paralytic attack with the virus may exhibit little or no antibody in the circulating blood but will show high titers of antibodies in tissues of its central nervous system. Such an animal is usually resistant to further intracerebral inoculations with the same strain of virus. More recently it has been demonstrated that repeated intramuscular injections of live virus in monkeys apparently produce no clinical evidence of the disease but do result in the production of high titers of antibody in the circulating blood. When by this method there is produced an antibody titer in the circulating blood above the 1:800 level, these animals have been found to be solidly resistant to intracerebral inoculations of the virus. It would appear that, although the antibody titer in the circulating blood bears no direct relationship to resistance to the disease, there may be an antibody threshold in the blood which permits sufficient amounts to spill over into and to render resistant the tissues of the central nervous system.

THE METABOLISM OF CELLS AND RESISTANCE TO THE DISEASE

Clinicians have recognized that poliomyelitis generally is a disease of the well nourished. This observation has logically led investigators to study cell metabolism and its relation to resistance to disease. It has been found that when an anterior horn cell is regenerating a damaged axis cylinder this cell is solidly resistant to infection with the virus of poliomyelitis. Efforts are being directed toward the determination of the chemical or metabolic differences caused, on the one hand, between a regenerating cell which is resistant to the virus, and, on the other, a normal cell which is susceptible. Preliminary observations indicate that the virus of poliomyelitis may inhibit utilization of glucose by these cells. If this is true, such alteration would mean a serious loss in energy. Further studies have shown that there is a considerable derangement or disorganization of the oxygen-carrying enzymes following an infection of the nerve cells by the virus of poliomyelitis.

NEUROPHYSIOLOGIC OBSERVATIONS IN POLIOMYELITIS

Poliomyelitis was formerly believed to be flaccid paralysis due solely to destruction of anterior horn cells. Since it is now an established fact that poliomyelitis may affect most of the nerve cells in the brain and spinal cord, one would expect that the clinical signs of this disease can result from a mixture of both upper and lower motor neuron lesions.

Electromyographic studies show that the acute paralytic muscle at rest is usually electrically active as compared with the normal muscle at rest, which is usually electrically quiet. Recent reports from the Scandinavian countries differ somewhat from these conclusions in that they indicate that both the normal and the paralytic muscles at rest can be electrically inactive, although it is much more difficult and, in fact, sometimes almost impossible to put the paralytic muscle in a position in which it is electrically inactive. These observers further report that, whereas the normal muscle under voluntary contraction exhibits an arhythmic electrical discharge, the poliomyelitic muscle under voluntary contraction usually exhibits a rhythmic electrical discharge. If the latter observations are true it would indicate that the poliomyelitic patient has difficulty in performing a slow steady contraction with paretic muscle, and indeed this does seem to be the case.

NEW EXPERIMENTAL ANIMALS

The discovery some years ago that the cotton rat and the Swiss mouse could be infected with the virus of poliomyelitis raised the hopes of investigators that the availability of these animals would allow for an early solution to many of the problems of this disease. Unfortunately, it has been found that these animals are susceptible to only one strain of the virus, and that only when inoculated by the intracerebral route. These limitations have seriously hampered the studies on relation of nutrition to susceptibility and the search for chemotherapeutic agents, serums or vaccines which might offer a cure or preventive of the disease.

Recently importers have been able to bring cynomolgus monkeys from the Philippines to this country, and there is considerable hope that the susceptibility of these animals to infection by the oral route will make it possible to study with renewed effort those phases of research which have of necessity been held in abeyance.

IMPROVED LABORATORY METHODS FOR THE DETECTION OF THE VIRUS

The only available method for the detection of the virus of poliomyelitis is the inoculation into the brain of the monkey of material suspected of containing the virus. If the virus is present the animal may develop clinical and histopathologic signs of the disease. The second step is the injection of a suspension of infected nervous tissues of the first animal into a second monkey. This procedure is not only time consuming, laborious and expensive but does not always indicate the presence of minute quantities of the virus. The present procedures for concentration and partial purification of the virus are by chemical and physical means; for example, removal of fat and contaminating bacteria by ether, adsorption and precipitation of the virus by ammonium salts, and the concentration of the virus by the ultracentrifuge have vastly improved the methods for detecting minute quantities of the virus. The improvement of this test has necessitated more time consuming, expensive and complicated procedures and can be utilized only in certain special circumstances.

MAJOR PROBLEMS TO BE SOLVED

The lines of investigation that are now being pursued include the following major problems, which must be solved:

1. The development of a simple laboratory test to identify, preferably, a single virus particle.
2. Development of a simple diagnostic laboratory test to indicate whether or not infection with the virus has taken place.
3. Determination of the relative number of virus particles required to infect the human being and the laboratory animal.
4. Determination of the physical, chemical and biologic characteristics of the virus particle.
5. Determination of the number and characteristics of the different types of the virus which produce clinical disease in man.
6. Development of a full understanding of (*a*) the metabolism of the cell and of the virus, and of (*b*) how the metabolism of the virus interacts with the metabolism of the host cell to produce disease.

The solution of these problems would seem to be fundamental to the development of any particular preventive or curative measures for infantile paralysis.

TREATMENT

When there is developed a nontoxic therapeutic agent —drug, antibiotic or serum—which will be specific against all strains of the virus of poliomyelitis there may then be presented to the members of the medical profession a standardized form of treatment. Until then it must be admitted that during the acute, or communicable, period of the disease treatment is entirely symptomatic. The physician should make the patient as comfortable as possible, protect the muscles already involved by the action of the virus on the nerve cell that innervates the muscle and prevent deformity.

There are those who have attempted to establish an empirical approach to the treatment of this disease. Acute anterior poliomyelitis demands of the physician and his professional co-workers the same exercise of judgment in the administration of therapeutic measures as does any other acute infection. He must consider the patient first, the disease as secondary in importance —empiricism does not lend itself to the art or science of medicine.

RELATION OF THE PROBLEMS OF POLIOMYELITIS TO THE PROBLEMS OF DISEASE IN GENERAL

There is considerable misunderstanding with regard to the ultimate purpose behind the creation of various organizations to combat specific diseases. While it is true that such an organization is primarily concerned with the eradication of one disease, no organization could conceivably carry out its program for any length of time unless it had as its real objective the eradication of disease in general.

The function of the human body, whether in the direction of the normal or the pathologic, is guided by the metabolism of the cells which make up the organism. If the chemical processes within and between these cells go forward in continuous normal sequence in one direction, the result is normality of the person, or health. If the sequence of these chemical reactions is in any way altered, whether by nutrition, by contact with an infectious agent, by trauma or by heredity, the net result is abnormality, or disease. An intelligent approach to an understanding of disease, whether such disease is cancer or allergy, infectious or degenerative, must be based on an understanding of the complicated metabolic process consummating in health. The technics for determining quantitatively these chemical reactions and their interrelations with one another are for the most part undeveloped. Research directed toward the solution of any one disease offers an opportunity to study under optimal conditions relatively few of these chemical processes, and an understanding of the entire problem can be obtained only by making the most of every single opportunity for fundamental investigation. The solution of many seemingly unrelated problems undoubtedly depends on the same basic knowledge, and any investigation which utilizes the processes of only one disease offers little opportunity to solve this problem. It is imperative that investigators in each disease be provided with every opportunity to exploit to the fullest extent the opportunities to contribute to fundamental knowledge which are inherent in that disease problem.

120 Broadway.

Accidents Are Less Expensive in Older Workers.—The belief that the older worker is more of an accident risk than the younger worker is not justified by facts. Kossoris has shown that in 26,000 employees in four plants the accident rate was highest for the younger workers in terms of frequency rates. That is, the average number of disabling injuries per million workers was higher among young workers than among old. Men between the ages of 40 and 54 had rates only about two-thirds as high as workers under 21, and 70 per cent as high as those in their twenties. The rate for workers aged 60 and over was lower than for those under 21 and about the same as for those between 21 and 29 years of age. . . . There are some exceptions to the general rule that older workers are less prone to accidents. One of these is connected with working in high environmental temperatures. In a study of the incidence of accidents among coal miners reported by Vernon and Bedford it was found that, the higher the temperature, the greater was the rise in accidents among older workers as compared with younger ones. Although usually older workers tend to be involved in few accidents, the duration of each disability tends to increase. Their injuries are apt to be more severe, and the healing process is slower. . . . The diminished accident rate for older workers more than counterbalances this longer healing period so that, in general, it may be concluded that older men have proved less expensive from the standpoint of accident cost than younger men.—Shock, N. W.: Older People and Their Potentialities for Gainful Employment, *J. Gerontology,* April 1947.

SUSTAINED HYPERTENSION

Predisposing Factors and Causes of Disability and Death

ROBERT L. LEVY, M.D.
New York
PAUL D. WHITE, M.D.
Boston
WILLIAM D. STROUD, M.D.
Philadelphia
and
BRIGADIER GENERAL CHARLES C. HILLMAN
United States Army (Retired)
Miami, Fla.

In previous publications[1] statistical analyses have been made to indicate the prognostic significance of transient hypertension, transient tachycardia and overweight. It has been shown that the presence of each of these three conditions, by itself, increases the probability of the later development of sustained hypertension and of retirement or death with cardiovascular-renal disease. The presence of two of these conditions is of greater importance in this respect than that of any one alone. The presence of all three is a circumstance of major prognostic importance.

The present study is intended to integrate the earlier reports. Because of the relatively small number of men who died during the periods of observation, retirements for disability and deaths have now been grouped together as medical casualties in service. In addition, the frequency of the primary causes of retirement and death have been tabulated for the cases with sustained hypertension. And finally, conclusions have been drawn which, it is hoped, will prove useful in formulating revised criteria for the selection of those physically qualified for military service.

MATERIAL, CRITERIA AND METHOD

The same medical records of 22,741 army officers which served as the source of material for earlier papers in the series were used in this investigation. The manner of collecting and analyzing the data has been described in previous publications.[1]

By sustained hypertension was meant a reading of over 150 mm. of mercury systolic or 90 diastolic, persisting throughout one examination and not followed in subsequent examinations by levels lower than these. Transient hypertension was taken to mean a reading above these same levels but which was followed on any particular examination or at a later examination by a reading below these levels. By transient tachycardia was meant a heart rate of 100 per minute or over, of sinus origin, which was followed after rest on any particular examination by a rate under 100. An officer was considered to be overweight if he was heavier, by 20 pounds (9 Kg.) or more, than the standard given in Army Regulations 40-105, issued by the War Department on Oct. 15, 1942.[1e] These standards were calculated according to height and age. The 20 pound (9 Kg.) excess as a criterion of obesity was chosen arbitrarily and without regard for the acceptable minimum and maximum weights included in the original army table. The age was noted at which overweight was first observed, and from then on the person was placed in the overweight class.

Cardiovascular-renal conditions, if present, were always included in the tabulation as causes of retirement or death, even though not recorded as directly responsible for either. Thus an officer may have retired or died with such a disorder but not necessarily because of it.

As in the papers to which reference already has been made, the method of person-years, specific for age, was employed in the analysis in order to obtain the proper base from which to calculate the various rates on the usual annual basis.

TABLE 1.—*Later Occurrence of Sustained Hypertension, by Age, Among 22,741 Army Officers*

Age	Person-Years Observed	Number Developing Sustained Hypertension	Rate per 1,000
25-29	33,199	19	0.6
30-34	39,071	41	1.0
35-39	42,479	100	2.4
40-44	41,300	191	4.6
45-49	34,091	365	10.7
50-54	21,954	406	18.5
55-59	11,776	350	29.7
Total	223,870	1,472	6.6

FACTORS INFLUENCING THE LATER DEVELOPMENT OF SUSTAINED HYPERTENSION

Transient Hypertension and Transient Tachycardia.—There were, among the 22,741 officers, 223,870 person-years of observation, indicating an average follow-up of 9.8 years. In table 1 are given the rates of developing sustained hypertension at the various ages, for the entire experience. Of the total, 176,410 person-years pertained to the group without transient hypertension. In 550 persons of this group sustained hypertension developed, giving a rate of 3.1 per thousand. Among the remaining 47,460 person-years for the group with transient hypertension, there were 922 cases with later sustained hypertension, or a rate of 19.4 per thousand. However, this latter group is loaded for the older ages so that, after adjusting for this fact, the rate becomes only 11.3 per thousand. Thus, the rate of the later development of sustained hypertension is 3.6 times as high in the group with transient hypertension as in the group without it.

It has already been shown[1c] that, with respect to the later development of sustained hypertension, all levels of transient hypertension, both systolic and diastolic, are significant. Of particular interest was the observation that slight degrees of elevation are important, even when the systolic level alone is involved. Of the greatest prognostic significance, however, is a transient rise in diastolic pressure above 100 mm. of mercury.

Dr. John W. Fertig, professor of biostatistics, Columbia University College of Physicians and Surgeons, aided in the analysis and preparation of the material for final presentation.

This is the sixth and final paper in a series dealing with "Studies of Blood Pressure in Army Officers." The six papers will be printed together as a pamphlet, copies of which may be obtained from the authors.

The work described in this paper was begun under a contract, recommended by the Committee on Medical Research, between the Office of Scientific Research and Development and Columbia University. The contract was transferred on Nov. 1, 1945 from the Office of Scientific Research and Development to the Army Research and Development Board, Office of the Surgeon General.

[1] (*a*) Hillman, C. C.; Levy, R. L.; Stroud, W. D., and White, P. D.: Studies of Blood Pressure in Army Officers: Observations Based on an Analysis of the Medical Records of 22,741 Officers of the United States Army, J. A. M. A. **125:** 699 (July 8) 1944. (*b*) Levy, R. L.; Hillman, C. C.; Stroud, W. D., and White, P. D.: Transient Hypertension: Its Significance in Terms of Later Development of Sustained Hypertension and Cardiovascular-Renal Diseases, ibid. **126:** 829 (Nov. 25) 1944. (*c*) Levy, R. L.; White, P. D.; Stroud, W. D., and Hillman, C. C.: Transient Hypertension: The Relative Prognostic Importance of Various Systolic and Diastolic Levels, ibid. **128:** 1059 (Aug. 11) 1945; (*d*) Transient Tachycardia: Prognostic Significance Alone and in Association with Transient Hypertension, ibid. **129:** 585 (Oct. 27) 1945; (*e*) Overweight: Its Prognostic Significance in Relation to Hypertension and Cardiovascular-Renal Diseases, ibid. **131:** 951 (July 20) 1946.

When transient tachycardia is present as well as transient hypertension, the picture is even more specific. Among the 165,216 person-years in which neither condition was present, there were 409 cases of later sustained hypertension, giving a rate of 2.5 per thousand. The rates for the groups in which only one of these two conditions was present were 3.4 times as large in both instances, after due allowance was made for the differences in the age distributions. When both conditions were present, the rate for the later development of sustained hypertension was 7.5 times as large as when both were absent.

TABLE 2.—*Later Occurrence of Sustained Hypertension, by Age, for Experience Without Transient Hypertension, Transient Tachycardia or Overweight*

Age	Person-Years Observed	Number Developing Sustained Hypertension	Rate per 1,000
25-29	25,339	8	0.3
30-34	26,926	10	0.4
35-39	26,269	28	1.1
40-44	22,562	32	1.4
45-49	16,650	65	3.9
50-54	9,681	53	5.5
55-59	4,542	48	10.6
Total	131,969	244	1.8

Overweight.—When something is known about the status of the person with respect to overweight, the situation is greatly altered. In table 1 are given the rates of development of sustained hypertension for the entire experience. In table 2, by way of contrast, are given the rates for the 131,969 person-years when transient hypertension, transient tachycardia and overweight were absent. There were 244 cases in this group, giving a rate of 1.8 per thousand. When adjusted to the age distribution of table 1, the rate becomes 2.3 per thousand. This is only about one third as high as the rate of 6.6 for the whole experience in which the various factors are mixed together, with one or another present or absent in different portions.

There are eight possible combinations of overweight, transient hypertension and transient tachycardia. These have not all been studied because of the complicated processes of tabulation involved and also because the number of person-years in some groups would be exceedingly small. The important relationships with regard to overweight have already been demonstrated.[1e] When overweight alone was present the rates were, on the average, 2.5 times as large as those of table 2, in which none of the three factors was present. When overweight was absent but both other factors were present the rates were, on the average, 8.7 times as large as those of table 2. Finally, when all three factors were present the rates were 12.3 times as large. All these differences are significant, indicating that the presence of overweight, regardless of the presence or absence of the other two factors, increases the risk of the later development of sustained hypertension.

CASUALTY RATES

In preceding papers disability retirements and deaths have been considered separately. In the discussion which follows, these categories have been combined as casualties because they represent, together, the total loss of manpower to the service and also because of the comparatively small number of deaths which occurred during the periods of observation. The low death rate was due to care in initial selection as well as to prompt retirement when disability rendered the officer unfit for active duty.

In table 3 are given the casualty rates among the 22,741 men. These may be summarized conveniently by actuarial methods. They imply that of 1,000 officers at age 25, 509 would survive to age 60 while 491 would be casualties by that age. Of the 491 casualties, 218 would be associated with cardiovascular-renal diseases and 273 with other conditions.

Regardless of other factors, the casualty rates for cardiovascular-renal diseases are significantly higher for the group with transient hypertension than for the group without it. On the average, the rate is twice as great. The casualty rates for non-cardiovascular-renal diseases also tend to be a little higher at most ages when transient hypertension is present than when it is obsent. While the rate is only 20 per cent larger, on the average, this is statistically significant.

Analysis of the relative importance of various levels of transient hypertension in relation to the casualty rates with cardiovascular-renal diseases shows the same trends as were noted for the later development of sustained hypertension, and as were noted for retirements and deaths separately.[1c] Here again, with one possible exception, every transient elevation above the normal, for both systolic and diastolic pressures, shows a statistically significant increase in the rate. Again, it is a diastolic reading of over 100 mm. of mercury which is of the greatest importance.

When transient tachycardia is present as well as transient hypertension, other interesting differences become apparent. The casualty rates for the cardiovascular-renal diseases when neither condition is present is 2.8. If transient hypertension alone is present, the rate is 1.9 times as large; if transient tachycardia is present alone, the rate is 1.8 times as large. If both transient hypertension and transient tachycardia are present, the rate is 2.9 times as large. All these differences are significant. The presence of either condition alone, therefore, has about the same effect in increasing the cardiovascular-renal casualty rate. The presence of both factors is of considerably greater importance in this respect. The effect on the rates for the non-cardiovascular-renal diseases is considerably less. The rate when neither condition is present is 7.7 per thousand. When transient tachycardia alone is present the rate is 70 per cent higher, but for the other two comparisons the rates are only some 20 per cent higher.

TABLE 3.—*Disability Retirements and Deaths, With and Without Cardiovascular-Renal Diseases, by Age, for 22,741 Officers*

		Casualties				
		Number		Rates per 1,000		
Age	Person-Years Observed	CV-R	Non-CV-R	CV-R	Non-CV-R	Total
25-29	33,241	12	246	0.4	7.4	7.8
30-34	39,176	15	282	0.4	7.2	7.6
35-39	42,747	46	324	1.1	7.6	8.7
40-44	41,892	124	377	3.0	9.0	12.0
45-49	35,180	250	367	7.0	10.4	17.5
50-54	23,298	406	292	17.4	12.5	30.0
55-59	13,022	477	190	36.6	14.6	51.2
Total	228,556	1,330	2,078	5.8	9.1	14.9

When overweight is taken into consideration, as well as transient hypertension and transient tachycardia, other differences appear. When all these factors are absent 132,923 person-years are involved, among which there are 324 casualties with cardiovascular-renal diseases and 984 with non-cardiovascular-renal diseases.

Table 4.—*Disability Retirements and Deaths, With and Without Cardiovascular-Renal Diseases, by Age, for Experience Without Transient Hypertension, Transient Tachycardia and Overweight*

		Casualties				
		Number		Rates per 1,000		
Age	Person-Years Observed	CV-R	Non-CV R	CV R	Non-CV-R	Total
25-29	25,356	8	174	0.3	6.9	7.2
30-34	26,957	7	167	0.3	6.2	6.5
35-39	26,342	10	157	0.4	6.0	6.3
40-44	22,765	29	169	1.3	7.4	8.7
45-49	16,885	68	146	4.0	8.6	12.7
50-54	9,924	93	99	9.4	10.0	19.4
55-59	4,751	109	72	22.9	15.2	38.1
Total	132,923	324	984	2.4	7.4	9.8
Adjusted to correspond to age distribution of person-years in table 3				3.2	7.8	11.0

The rates at the various ages are given in table 4. These may be contrasted with the rates for the total experience in table 3, in which the various factors are mixed together, with one or another absent in different portions. It is thus apparent that the cardiovascular-renal casualty rates at the various ages, shown in table 4, are approximately half as large as those for the total experience. The rates for non-cardiovascular-renal diseases also run somewhat lower. The casualty rates at all ages, as given in table 4, are not immediately comparable to the corresponding values of table 3 because of differences in the relative age distributions. After proper adjustment, the rates at all ages become 3.2 for cardiovascular-renal diseases, 7.8 for non-cardiovascular-renal diseases, and 11.0 for all causes, contrasted with the corresponding rates of 5.8, 9.1 and 14.9 for table 3.

The effect of overweight may also be noted by comparing the cardiovascular-renal and non-cardiovascular-renal casualty rates when only the factor of overweight is present, with those of table 4, when all the modifying factors are absent. On the average, the rate is 50 per cent larger for the cardiovascular-renal conditions and 20 per cent larger for the non-cardiovascular-renal conditions. The latter increase is, however, of doubtful significance. When transient hypertension, transient tachycardia and overweight are all present, the rates are 260 per cent larger and 40 per cent larger, respectively.

These comparisons may be restated as follows: Of 1,000 persons at age 25 without any of the three modifying factors present, 610 would survive to age 60 while 390 would be casualties; 140 would be casualties attributable to cardiovascular-renal diseases and 250 to non-cardiovascular-renal diseases. With overweight alone present, there would be 545 survivors to age 60 with 455 casualties, of which 178 would be associated with cardiovascular-renal diseases and 277 with other conditions. With transient hypertension, transient tachycardia and overweight all present, there would be only 344 survivors and 656 casualties, of which 370 would be cardiovascular-renal and 286 non-cardiovascular-renal.

It is thus clear that overweight alone is significant as a factor in increasing the casualty rate for cardiovascular-renal diseases. If combined with transient hypertension and transient tachycardia, it is followed by a rate almost four times as great as in the group in which none of these conditions is found. The effect of overweight is much less striking for the non-cardiovascular-renal diseases.

CASUALTIES AMONG CASES OF SUSTAINED HYPERTENSION

A review of the primary causes of retirement gives, of necessity, an incomplete picture of the late effects of hypertension because it can deal only with those which occur during the period of observation. Information concerning an officer's state of health after leaving the army is not contained in his file. After sustained hypertension was first discovered, the average duration of follow-up, in this series of cases, was only about three years. The number of men who died in service was comparatively small; most of those suffering from a chronic ailment were promptly retired and the causes of death are not known. The figures to be given, therefore, are not comparable to those appearing in other studies of hypertensive vascular disease in which the follow-up periods were longer. However, the recorded retirements and deaths, together, furnish data on total casualties while on active duty.

Among 22,741 officers, sustained hypertension developed in 1,472 (table 1). This is an incidence of 6.5 per cent. In table 5 are given the primary causes of retirement and death for the casualties in this group. There were in all 918 casualties, of which 741 retired and 177 died. The various causes are listed in the order of their frequency with respect to total casualties.

Table 5.—*Primary Causes of Retirement and Death in Group with Sustained Hypertension*

	Number		
Causes of Retirement and Death	Retired	Died	Total Casualties
Cardiovascular	534	96	630
Hypertension	318	0	318
Coronary heart disease (including angina pectoris and thrombosis)	80	47	127
Cerebral arteriosclerosis (including hemorrhage and thrombosis)	68	24	92
Valvular heart disease	21	0	21
Heart disease (type unspecified)	10	11	21
Congestive failure	7	11	18
Arteriosclerosis (generalized)	16	0	16
Cardiac arrhythmia	13	0	13
Aneurysm of aorta (ruptured or dissecting)	0	3	3
Dilatation of aorta	1	0	1
Renal	21	12	33
Chronic nephritis	17	9	26
Other	4	3	7
Miscellaneous	186	69	255
Total	741	177	918

Retirements.—Of 555 persons retired for cardiovascular-renal diseases, the most frequent primary cause of disability obviously was hypertension, which accounted for 318 cases. Next in order came coronary heart disease, with 80 cases; in 40 of these the patient experienced an attack of thrombosis. Cerebral arteriosclerosis was third on the list, with 68 cases; these included 17 cases of hemorrhage and 10 of thrombosis of cerebral vessels. These three conditions together were responsible for 84 per cent of all retirements for cardiovascular-renal diseases. Valvular heart disease, cardiac disease of unspecified type, congestive failure, generalized arteriosclerosis, cardiac arrhythmia and dilatation of the aorta each accounted for less than 22 cases.

In the renal group there were 21 cases, of which 17 were instances of chronic nephritis. Uremia was not noted.

There were 186 retirements for miscellaneous reasons, with neuropsychiatric conditions heading the list with 53 cases. Trauma, with 20, and arthritis, with 18, came next in order.

Deaths.—One hundred and eight officers with sustained hypertension died of cardiovascular-renal conditions while in service. Coronary heart disease caused death in 47; among these, thrombosis occurred in 39. Cerebral hemorrhage killed 24. These two conditions ogether accounted for 66 per cent of the 108 fatalities ue to cardiovascular-renal conditions. It is of interest that in not a single instance was valvular heart disease given as the primary cause of death. Cardiac disorders of unspecified type and congestive failure caused 11 deaths each. There were 3 cases of aortic aneurysm; 2 ruptured, and 1 was of the dissecting variety.

Among 12 renal deaths, 9 were due to chronic nephritis. Uremia occurred only once.

In the miscellaneous group malignant diseases headed the list, having caused death in 14 cases. Pneumonia and trauma each accounted for 11 deaths, and suicide for 9.

Total Casualties Due to Cardiovascular-Renal Diseases.—If retirements and deaths are combined, hypertension itself, coronary heart disease and cerebral vascular disorders were by far the leading causes of loss to the service of men with sustained hypertension. Together, they caused 81 per cent of the total number of casualties due to cardiovascular-renal conditions. Chronic nephritis was next in frequency. Of lesser importance were valvular heart disease, cardiac disease of unspecified type, congestive heart failure and generalized arteriosclerosis.

Among the miscellaneous causes, in order of frequency, were neuropsychiatric conditions, trauma, arthritis, gastrointestinal disorders and malignant disease.

SUMMARY AND CONCLUSIONS

1. Statistical analyses were made of the medical records of 22,741 officers of the United States Army to determine the prognostic significance of transient hypertension, transient tachycardia and overweight noted in the course of annual physical examinations. The method of person-years was employed in the analyses.

2. The indexes chosen to demonstrate the influence of these three factors on the subsequent state of health and cause of death were the rates of the later development of sustained hypertension and of retirement or death with cardiovascular-renal diseases.

3. Transient hypertension or transient tachycardia or overweight, each by itself, increased the probability of the later development of sustained hypertension and of retirement or death with cardiovascular-renal disease. The presence of two of these conditions was of greater importance, in these respects, than that of any one alone. The presence of all three was a circumstance of major prognostic importance.

4. In the group in which sustained hypertension developed, the leading causes of retirement because of cardiovascular-renal diseases were hypertension itself, coronary heart disease and cerebral arteriosclerosis, including hemorrhage and thrombosis. These three conditions together accounted for 84 per cent of such retirements. Coronary heart disease and cerebral hemorrhage together were responsible for 66 per cent of the deaths from cardiovascular-renal conditions during the period of observation.

5. In revising standards for the selection of those physically qualified for military service, factors predisposing to the later development of sustained hypertension and cardiovascular-renal diseases should be taken into account. When making disposition of men in whom sustained hypertension develops while they are in service, consideration may well be given to the high incidence and disabling nature of the circulatory and renal complications associated with this condition. The extent to which the conclusions derived from these studies are applied can be varied according to the need for manpower.

6. It seems probable that the facts obtained from the analyses of the records of army officers hold true also for the general male population of comparable physical fitness and similar age groups.

POSTOPERATIVE RESULTS IN PRIMARY TENDON SUTURE OF THE HAND AND WRIST

MARK B. COVENTRY, M.D.
and
NORMAN R. BECK, M.D.
Rochester, Minn.

Successful repair of the severed tendon is a problem which has not been completely solved. Numerous excellent articles on the subject have appeared in recent years,[1] but certain factors still prevent the surgeon from achieving the best result in the surgical repair of a lacerated tendon, especially of the hand and wrist.

In the period from Jan. 1, 1935 to Jan. 1, 1945 primary suture of the tendons of the hand and wrist was performed at the Mayo Clinic in 43 cases. Only the cases in which the patients were treated within four hours after injury and in which bone was not involved were included. Cases of secondary repair and tendon grafts were excluded from the group. Tendon lacerations, compound fractures and avulsions are encountered fairly commonly in the same case at the clinic because of the accidents which occur in the large surrounding rural community. In the fall accidents with corn shredders and other farm machinery occur frequently. Fortunately, the number of these accidents is diminishing, due in no small part to the publicity

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From the Section on Orthopedic Surgery, Mayo Clinic (Dr. Coventry), and Fellow in Orthopedic Surgery, Mayo Foundation (Dr. Beck).

[1] (*a*) Bunnell, S.: Primary Repair of Severed Tendons: The Use of Stainless Steel Wire, Am. J. Surg. **47**: 502-516 (Feb.) 1940. (*b*) Koch, S. L.: Division of the Flexor Tendons Within the Digital Sheath, Surg., Gynec. & Obst. **78**: 9-22 (Jan.) 1944. (*c*) Mason, M. L.: Primary and Secondary Tendon Suture: A Discussion of the Significance of Technique in Tendon Surgery, ibid. **70**: 392-402 (Feb.) 1940. (*d*) Miller, H.: Repair of Severed Tendons of the Hand and Wrist: Statistical Analysis of Three Hundred Cases, ibid. **75**: 693-698 (Dec.) 1942.

given them at farmers' meetings. Young has been especially active in this regard.[2]

The average time which elapsed from injury to repair was one hour and forty-two minutes. This was a favorable factor. The incidence of infection was low: in 12 cases slight drainage occurred about the suture, and in only 2 cases was frank infection present. With the present availability of chemotherapeutic agents the incidence of infection may be expected to fall even lower.

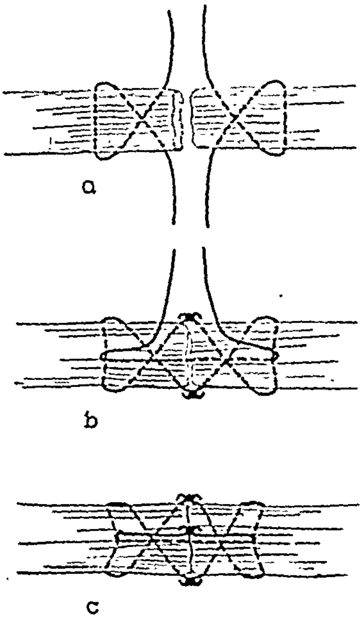

Fig. 1.—Method of suturing tendon. In *b* and *c* the usual method is modified. A "stay" suture is used for additional strength and closer approximation.

Almost all suture material used during this ten year period was silk. Since Bunnell's[1a] report of his work we have used stainless steel wire sutures, as well as silk, with gratifying results. In most cases we prefer to bury the suture. The technic of suture varies, but the method shown in the accompanying illustration has been found satisfactory. The actual technic is difficult to evaluate because the injuries have been repaired by several different surgeons. Excellent articles covering surgical principles and technic have been published by Mason[1c] and by Koch.[1b]

The following rules are important: 1. Thorough toilet of the wound should be carried out. 2. Tissues should be handled carefully. 3. Hemostasis should be complete. 4. Incisions should be made in the creases. 5. A minimal number of sutures and small knots should be used. 6. The fibrous tendinous sheath should be removed, and fat should be placed in apposition over tendons. 7. Tendons of the flexor digitorum sublimis should be removed or allowed to retract; only tendons of the flexor digitorum profundus should be sutured when the two are severed. 8. Splints should be used, and physical therapy should be given.

The question of whether splints should be used is somewhat controversial. No deductions can be made from the cases reported herein. All tendons were splinted for varying periods. Bunnell recommended early motion after repair to prevent adhesions. Koch and Mason advocated splinting for three or four weeks to prevent adhesions. We think that splinting of the tendons of the flexor muscles for four weeks and of tendons of the extensor muscles for six weeks is ideal. The splint should be removed as soon as possible (in a few days if integrity of the suture is adequate, in ten or twelve days if it is doubtful) and the tendon should be passed through a full range of active motion once a day. Excessive motion during this healing stage may increase adhesions.

Excellent results were those in which there was no disability and the patient had no complaints. Good results were those in which 75 per cent or more of normal function was obtained, but the result was short of perfect. Poor results were those in which less than 75 per cent of normal function was restored. Cases involving the tendons of the extensor muscles are grouped together, for the problem is essentially the same whether they are severed at the wrist, metacarpal region or fingers. Results were poorest in cases of injury of the tendon of the flexor muscle when the injury was in a region where a fibrous tendinous sheath exists, as in the finger or under the transverse carpal ligament, which is essentially a fibrous tendinous sheath. Results for the two groups are presented in the accompanying table. In the 3 cases of severed tendons of the flexor muscles of the fingers and palm in which the results were classed as poor, a second operation was performed later and results were good. In 1 case the suture pulled out after the first operation; in the other 2, poor results were due to adhesions and later transplantation of tendons was performed with a good outcome.

ANALYSIS OF THE POOR RESULTS

I. *Tendons of the Flexor Muscles in the Fingers and Palm*

CASE 1.—*Tendon from the flexor digitorum profundus to the forefinger.* The tendon was badly contused and lacerated by an electric fan. Primary suture was not done. Because the distal phalanx ultimately became stiff and without sensation, amputation of the distal phalanx was performed.

CASE 2.—*Tendons from the flexor digitorum profundus and flexor digitorum sublimis to the index finger.* The tendons were lacerated by a buzz saw. The distal interphalangeal joint was not movable; the proximal interphalangeal joint could be flexed only to 30 degrees. The tendons of the flexor digitorum profundus had become adherent to the tendons of the flexor digitorum sublimis. Secondary repair was advised, but the patient refused surgical treatment.

CASE 3.—*Tendon of the flexor pollicis longus.* After a buzz saw caused injury to the tendon at the base of the proximal phalanx of the thumb slight purulent drainage occurred for two weeks. As a final result the distal phalanx could not be flexed but was stable in a neutral position.

CASE 4.—*Tendons from the flexor digitorum profundus and flexor digitorum sublimis to the index finger.* In spite of warnings by physicians[3] injuries on broken porcelain handles of water faucets still occur. This patient severed the tendons from the flexor muscles to the index finger at the metacarpophalangeal joint on the broken handle of a faucet. End to end suture of both tendons was performed, and infection did not occur; but as a result only half normal flexion of the distal and middle phalangeal joints could be accomplished. However, the patient is able to type.

Results of Primary Repair with Primary Suture of Tendons of the Hand and Wrist

	Cases in Which Results Were			
Site	Excellent	Good	Poor	Questionable
Tendons of flexor muscles				
Fingers and palm	5	3	8	
Wrist	6	..	1	
Tendons of extensor muscles	12	2	2	1*
Totals	23	5	11	1

Total traced patients, 40
Total patients, 43

* Finger was stiff before injury.

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[2] Young, H. H., and Ghormley, R. K.: Accidents on the Farm, J. A. M. A. **132**: 768-771 (Nov. 30) 1946.

[3] Steenrod, E. J.; Ghormley, R. K., and Craig, W. McK.: Injuries of the Hands Due to Shattered Porcelain Handles of Water Faucets, Surg., Gynec. & Obst. **64**: 950-955 (May) 1937.

Case 5.—*Tendons from the flexor digitorum sublimis and flexor digitorum profundus to the index finger.* The tendons were severed at the metacarpophalangeal joint on the porcelain handle of a water faucet. Silk sutures pulled out, and repair was made again one month later. The result of the secondary repair was classified as good (more than 75 per cent of normal function in the finger).

Case 6.—*Tendons from the flexor digitorum sublimis and flexor digitorum profundus to the ring finger.* The tendons were lacerated by a power mower. Infection occurred, and the tendon sloughed at the proximal interphalangeal joint. A tendon was transplanted subsequently. The tendon of the extensor muscle of the fourth toe was used. The result was classed as good after the secondary procedure.

Case 7.—*Tendon of the flexor pollicis longus.* The tendon was lacerated on a broken cup. Adhesions occurred, and as a result the distal phalanx could not be flexed. However, the joint was stable.

Case 8.—*Tendons from the flexor digitorum sublimis and flexor digitorum profundus to the ring finger.* This laceration occurred at the metacarpophalangeal joint when the patient, a boy 2 years of age, fell on some glass. The original repair of the tendon to the fourth finger was successful. The little er failed to function after the first repair. Another opera- n was performed, but no appreciable improvement in flexion sulted.

II. *Tendons of the Flexor Muscles at the Wrist*

Case 9.—This patient fell through a window and all tendons of the flexor muscles, nerves and radial and ulnar arteries at the wrist were lacerated. The arterial lacerations were not complete and some circulation persisted, but an arteriogram later showed terminal occlusion of all digital arteries without adequate collateral circulation. The poor result cannot be attributed entirely to the injury to the tendons.

III. *Tendons of the Extensor Muscles*

Case 10.—*Tendons from the extensor digitorum communis to the fourth and fifth fingers.* Laceration occurred while the patient was chopping wood with an ax. The injury was located 5 inches (12.7 cm.) above the wrist. Splinting was carried on for sixty days after suture of the tendons with silk. When the patient was last examined, nine years after the injury, full extension of the fingers was possible when the wrist was held in a neutral position, but the fingers could not be fully extended when the wrist was dorsiflexed. The patient did not consider that he was handicapped for general labor.

Case 11.—*Tendon from the extensor digitorum communis to the index finger.* The tendon was lacerated at the proximal interphalangeal joint. After repair of the injury with silk sutures, seropurulent drainage occurred. On last examination the joints of the distal and middle phalanges were practically immovable.

SUMMARY

The postoperative results of suture of acute lacerations of the tendons of the hand and wrist encountered at the Mayo Clinic in a ten year period have been reported. Poorest results were obtained when lacerations of the tendons of the flexor muscles occurred at the finger through the fibrous tendinous sheath. Careful adherence to the rules presented gives a higher percentage of good results. Two or more surgical procedures are necessary in many cases before all that can be done for the patient is accomplished. The poor results have been evaluated carefully. In some cases they were due to infection; in others, to suture of the tendon of the flexor digitorum sublimis as well as the tendon of the flexor digitorum profundus. In 1 case poor results were due to prolonged splinting. In some of the cases in which the results were classed as poor there seemed to be factors which were beyond control.

POLYETHYLENE, A NEW SYNTHETIC PLASTIC FOR USE IN SURGERY

Experimental Applications in Neurosurgery

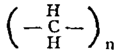
FRANC D. INGRAHAM, M.D.
EBEN ALEXANDER Jr., M.D.
and
DONALD D. MATSON, M.D.
Boston

The synthetic plastics industry has contributed a large number of materials that have been used in making diagnostic and therapeutic instruments. The number of synthetic plastics that can be buried safely within human tissues, however, is surprisingly small. Methyl methacrylate ("lucite," "plexiglas," "perspex") and nylon have been found, after extensive animal experimentation and clinical use, to be well tolerated by tissues.[1] Methyl methacrylate is a hard, transparent plastic suitable for cranioplasty, dentures, soft tissue prostheses in plastic surgery, rigid tubes and other uses not requiring pliability. Nylon is well known as a suture material. Many other plastics have been used sporadically in clinical surgical practice but discarded for various reasons.

There is need for a synthetic plastic material of pure composition, well tolerated by tissues, which can be made into flexible tubes and thin, pliable sheets. A relatively new plastic material, polyethylene [1a] ("polythene"), has been found to fill these needs. The subsequent discussion will deal with a description of polyethylene and the presentation of experimental data.

✓ DESCRIPTION OF POLYETHYLENE

Polyethylene is a long-chained polymer of ethylene and has, on theoretic grounds, the simplest chemical formula of all the plastics.[1b] Each molecule is formed of a saturated aliphatic hydrocarbon chain, each carbon atom of which carries two hydrogen atoms:



$$\left(-\overset{\text{H}}{\underset{\text{H}}{\text{C}}}-\right)_n$$

Bailey [2] has stated that each molecule contains 200 to 1,000 or more ethylene units. As it is now manufactured, polyethylene has a molecular weight of about 18,000, which is suitable for extrusion into tubes and thin sheets.

Polyethylene was first produced in 1936, when a new process involving polymerization of ethylene under extremely high pressures was developed in Great Britain.[3] Somewhat later commercial production was begun, and the material was used extensively in the manufacture of airplanes as an electric wire insulator. The production of polyethylene was begun in the United States in 1943.

From the neurosurgical service, the Children's Hospital, and the Department of Surgery, Harvard Medical School.

Fellow in neurosurgery, the Children's Hospital, and research fellow in surgery, Harvard Medical School (Dr. Matson).

Neurosurgeon-in-chief, the Children's Hospital, and assistant professor of surgery, Harvard Medical School (Dr. Ingraham).

Fellow in neurosurgery, the Children's Hospital, and research fellow in surgery, Harvard Medical School (Dr. Alexander).

[1] Ingraham, F. D.; Alexander, E., Jr., and Matson, D. D.: Synthetic Plastic Materials in Surgery, New England J. Med. **236**: 362-368, 402-407, 1947.

[1a] Polythene in bulk is furnished to manufacturers by E. I. du Pont de Nemours and Company, Inc.

[1b] Pure polyethylene tubing is obtainable from the Surprenant Electrical Insulation Company, 199 Washington Street, Boston. Pure polyethylene film is obtainable from the Harwid Company, 1108 Boylston Street, Boston.

[2] Bailey, R. L.: Polythene Used in Britain as Insulation in British Aircraft, E. I. du Pont de Nemours & Co., Inc., 1941.

[3] Plastics Educational Booklet, American Association of School Administrators, Nov. 1, 1945. Prepared by Committee of Delaware Members. H. V. Holloway, State Superintendent of Schools, Delaware, Chairman.

This plastic has a microcrystalline structure; it is not completely transparent, but has a slightly cloudy appearance. It is a decidedly tough thermoplastic resin which, unlike most plastic materials, does not require the addition of another chemical compound to make it flexible and pliable. Such chemicals, called plasticizers, are frequently added to plastic materials to increase their pliability, but plasticizers are generally tissue irritants. In thin sections polyethylene is extremely flexible, but it does not have the limp, rubbery quality characteristic of most nonrigid plastics. It has been used extensively in industry because of its electrical insulating properties. To enhance these properties substances called antioxidants are sometimes added. These added substances, the exact nature of which is not divulged by the manufacturers, are considered to be as harmful to tissues as plasticizers, and only the pure polyethylene should be used in surgical practice. A more complete discussion of this aspect of synthetic plastics may be found elsewhere.[1]

Polyethylene will stretch without breaking easily, but it has relatively little elasticity It is light, with a specific gravity of 0.92. Water absorption is slight; the material is unaffected by salt water. It is chemically inert and is resistant to most of the common solvents. It is not affected at room temperatures by such compounds as concentrated hydrochloric, sulfuric or hydrofluoric acids. Concentrated sodium hydroxide does not alter the plastic. Carbon tetrachloride and trichloro-ethylene cause the plastic to swell at room temperature but do not dissolve it

Polyethylene becomes amorphous above 115 C., but its physical properties are not significantly altered by ordinary climatic temperatures or by the range of body temperature changes. It remains flexible and strong over a wide range of temperature changes.

Because of its low melting point, polyethylene is reduced to an amorphous mass by autoclaving. Boiling it in water does not seem to change its physical properties significantly, except that it retains the shape in which it is placed during boiling. Sterilization of the plastic by soaking it in a 1 : 1,000 aqueous solution of benzalkonium chloride ("zephiran chloride" N. N. R.) for eighteen to twenty-four hours has proved satisfactory, and this method has been used in the experiments reported herein. Since the plastic, either in the form of a tube or a film, is lighter than water, it must be weighted to the bottom of the solution in which it is sterilized, and care must be taken to insure contact between the sterilizing solution and the lumen of the tube, particularly tubes of small caliber.

Polyethylene can be extruded easily in the form of tubes of any convenient size or in sheets of any desirable thickness. Tubes with an outside diameter of 1 mm. and film 0.002 inch (0.005 cm.) thick have been found easy to handle and suitable for surgical procedures (fig. 1). In the form of either tube or film the plastic is inexpensive.

REVIEW OF THE LITERATURE

There have not been any published reports of controlled tissue experiments with polyethylene. Meyers[4] described a method of intravenous catherization using a tubing known as "med-o-seal."[5] Material for this use has been supplied to this laboratory as polyethylene. His paper does not state whether the tubing he actually used was polyethylene or some other plastic material. He reported that the plastic he used produced no foreign body reaction in human tissues; he reported no animal experimentation.

Poppe and De Oliveira[6] investigated methods of obliterating aneurysms by inducing fibrosis around them with irritating plastic film. They used a material called "polythene cellophane," which caused a pronounced fibrous reaction around the aorta in experimental animals. They used the same material in 4 human cases but without sufficiently long follow-up to report results. The exact type of polyethylene used was not recorded.

Diamond and Thomas[7] have used small caliber polyethylene tubing in the treatment of newborn babies with erythroblastosis. They have inserted the tubing through the umbilical vein into the inferior vena cava, leaving the tube in place up to three hours. Through the tubing 450 cc. of the blood of the infant has been withdrawn and replaced by 500 cc. or more of Rh negative blood. No evidence of irritation from the tubing has been seen, and the infants treated in this way have shown immediate improvement.

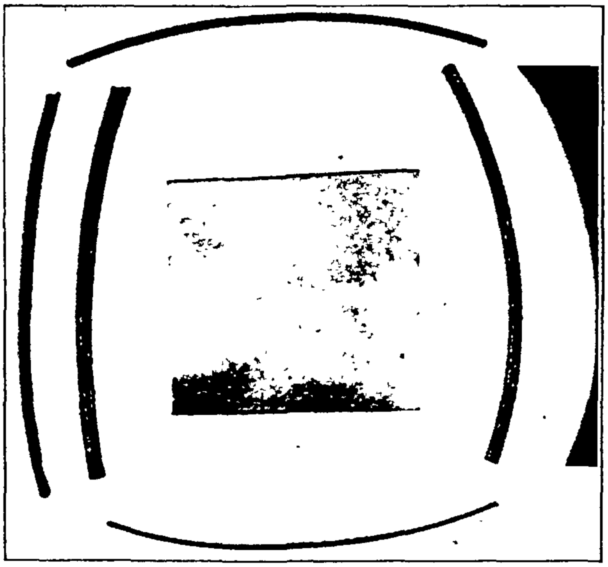


Fig. 1.—Samples of pure polyethylene film and hollow tubing. On the extreme left and the extreme right of the figure are sections of no. 8 F soft rubber catheter for comparison of size. The film is 0.002 inch (0.005 cm.) thick. The tubing can be extruded in any diameter desired.

EXPERIMENTAL DATA

Scope of the Investigation.—Interest in the present investigation was focused principally on the reactions produced by this plastic in the central nervous system and its coverings. Two general groups of experiments were therefore undertaken: (1) implantation of polyethylene directly into the cerebral cortex, and (2) replacement of an area of excised dura with polyethylene film. The experiments were controlled by the performance of similar operative procedures without use of the plastic on the contralateral side in the same animal.

Tissue reactions were studied in 43 cats, 10 dogs, 9 monkeys and 3 rabbits. The animals were killed at scheduled intervals of 5, 7, 10, 14, 21, 30, 60, 90 and 150 days after operation. When animals died of some condition not related to the experiments, they were included in this study only if they were free from infection in or near the operative site. None of the animals showed evidence during life of cerebral irritation or of any unusual behavior that could be attributed to the presence of polyethylene.

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[4] Meyers, L.: Intravenous Catheterization, Am. J. Nursing 45: 930-931, 1945.

[5] Supplied by A. C. Balfour, Englewood, N. J.

[6] Poppe, J. K., and Renault de Oliveira, H.: Treatment of Syphilitic Aneurysms by Cellophane Wrapping, J. Thoracic Surg. 15: 186-195, 1946.

[7] Diamond, L. K., and Thomas, W. O., Jr.: Replacement Transfusions in the Treatment of Severe Erythroblastosis Fetalis by a Single Plastic Catheter in the Umbilical Vein, to be published.

The animals were killed with an overdose of pentobarbital sodium, the carotid arteries perfused with isotonic solution of sodium chloride followed by 10 per cent solution of formaldehyde; the brains were removed intact and placed in 10 per cent solution of formaldehyde for further fixation. Microscopic sections stained with hematoxylin and eosin were then prepared for detailed study of the histologic responses to the presence of the plastic.

I. *Implantation of Polyethylene into the Brain.*

Segments of polyethylene tubing 3 to 5 mm. in length with an outside diameter of slightly more than 1 mm. were embedded in the parietal lobe of the cerebral hemisphere. This was accomplished through a tiny lural flap exposed through a small bur hole. The ubing, beveled at one end, was introduced into the cerebral tissue perpendicular to the surface. The operative wounds were closed in layers with silk. Similar experiments were performed with polyethylene film wrapped tightly in the form of a cylinder and embedded in the brain perpendicular to the cortex.

At the time these animals were killed the local site of implantation was carefully examined. In none of them was there evidence of any gross reaction around the polyethylene. Both the tubing and the film could be slipped easily out of the location in the cerebral tissue, leaving a discrete round hole without gross distortion of the surrounding tissue.

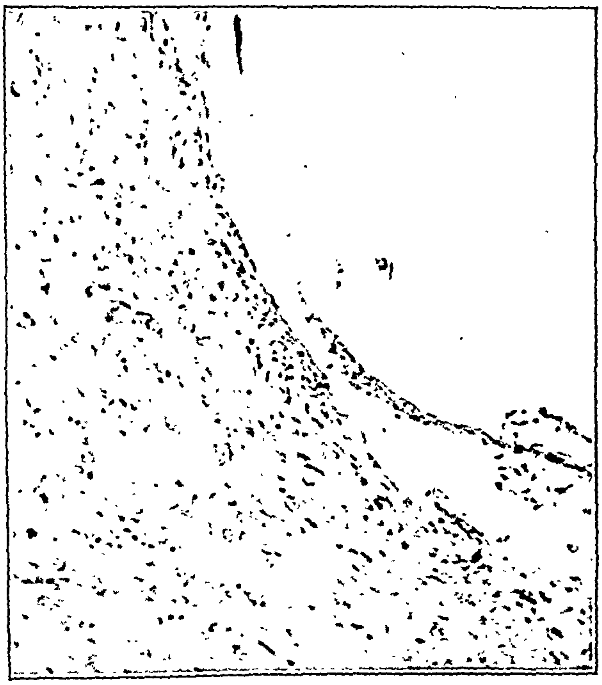

Fig. 2 (cat 64).—Photomicrograph of cerebral cortex seven days after implantation of polyethylene tubing (hematoxylin and eosin). Note the absence of polymorphonuclear leukocytes or increased vascularity. There is minimal small round cell infiltration, similar to that seen adjacent to a simple stab wound.

Histologic sections through the area of implantation up to ten days showed no more tissue reaction than was found adjacent to a control stab wound elsewhere in the cortex (fig. 2). No collections of polymorphonuclear leukocytes were found in any of the sections. Sections made through implantation sites in experiments lasting more than ten days showed a thin layer of glial tissue and slightly compressed cerebral tissue around the cavity containing the plastic. The glial layer was one to three cells in thickness and increased gradually over the weeks, until at ninety days it was six to eight cells thick. The surrounding cerebral tissue showed no increased vascularity and no inflammatory or foreign body reaction (fig. 3). The thin glial tissue lining the cavity was similar to that seen in response to tantalum, vitallium and methyl methacrylate, all of which have been established as well tolerated by human tissues.[8]

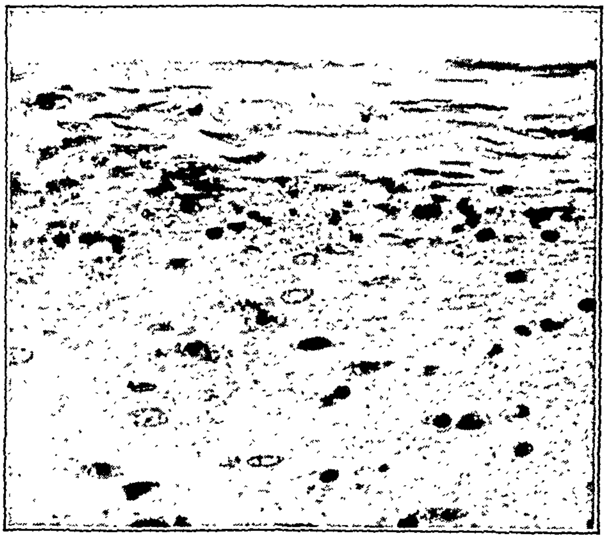

Fig. 3 (cat 66).—High power photomicrograph of the implantation site of polyethylene tubing, which had been placed in the cerebral cortex sixty-five days previously (hematoxylin and eosin). Note the increased thickness of the layer of glial tissue adjacent to the location of the tube. Also note the lack of increased vascularity and the minimal round cell infiltration.

In contrast to polyethylene, brains were examined in which du Pont "Cellophane (PT 300)" had been implanted in a similar manner.[9] The "Cellophane" was adherent to the surrounding tissue and could not be dislodged easily from its bed; there was edema around the implantation site early, with polymorphonuclear leukocytic infiltration. When the acute inflammatory response subsided after ten to twenty days an intense gliosis was evident, which became increasingly dense (fig. 4).

II. *Polyethylene Film Used as Dural Substitute.*

Thirty-two cats were subjected to operations in which polyethylene film 0.002 inch (0.005 cm.) in thickness was used to replace dura. In some instances bone flaps were elevated and replaced; in others a bone defect was created to expose the dura and was covered subsequently only by normal muscle. Difficulty was at first encountered in obtaining the film as pure polyethylene. Film containing antioxidants cannot always be differentiated grossly from pure film, and although it cannot be proved that the material used in early experiments was impure, it was observed that when material known to be pure was obtained the experimental results were much more satisfactory.

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[8] Mackenzie, C. M.; Sharpless, D. H., and Millard, P.: Tissue Reactions to Vitallium and Acrylic Implants, Northwest Med. 44:277-283, 1945.

[9] Page, I. H.: A Method for Producing Persistent Hypertension by Cellophane, Science 89:273-274, 1939.

In earlier experiments, in which film of apparently impure quality was used, in several animals there developed relatively large hematomas between the arachnoid and the film. These were gradually absorbed and replaced by fibrous tissue. In the last 13 cats operated on, pure film was used and no hematomas were encountered except in 1 cat, in which a small hematoma formed under the anterior portion of the film. This development was also observed in 1 monkey, in which a piece of film 4 by 2 cm. was used to cover a large portion of one cerebral hemisphere. The collection of blood under the film measured 1 to 2 mm. in thickness and 1.5 cm. in width. This was not considered significant in view of its small size and the fact that the remainder of the cortex under the film was free of hemorrhage or gross reaction. In this case the presence of the hematoma was attributed to a technical error.

Animals killed in less than ten days showed *no gross* or microscopic reaction around the film, and the underlying cortex was plainly visible through it (fig. 5). After ten days, it became apparent that the film was being gradually encapsulated by a thin neomembrane on both its inner and outer surfaces. These layers were apparently derived from the dura. The inner surface was generally adherent to the underlying arachnoid by filmy adhesions; these were most pronounced immediately under the silk or nylon sutures used to attach the film to the dural edges. In animals that were allowed to survive thirty to ninety days, the film was found completely enclosed by a thin nonadherent fibrous envelope, or neomembrane, which contained a minute amount of clear fluid similar to that described in experiments with methyl methacrylate by Beck, Russell, Small and Graham[10] and to that found around thin tantalum foil by Pudenz and Odom.[11]

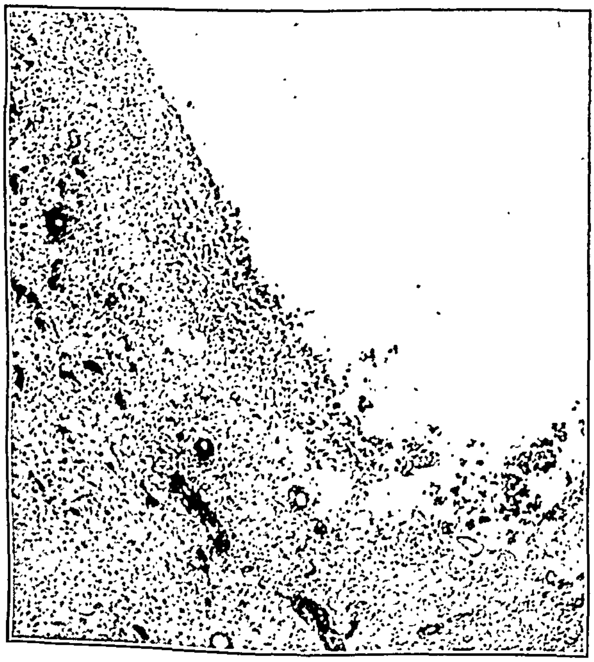

Fig. 4 (cat 74).—Low power photomicrograph of the implantation site of "Cellophane (PT 300)" five days after its introduction into the cerebral cortex (hematoxylin and eosin). Note the widespread infiltration of polymorphonuclear leukocytes and the perivascular cuffs of inflammatory cells. (Compare with *fig. 2.*)

The underlying cortex showed no abnormalities. There was mild thickening of the arachnoid, and in the early stages microscopic collections of red blood cells in the subarachnoid space, doubtless the result of operative trauma, were sometimes in evidence.

In 11 cats fibrin film was used as a dural substitute over the left cerebral hemisphere, polyethylene film over the right hemisphere. The use of fibrin film as a dural substitute is well known.[12] The degree of reaction to each type of film was about equal. Although the reaction to both polyethylene and fibrin film was found to be slight, in no instance was the cortex underlying the film as free of adhesions as was that under control dural flaps which had been raised and immediately resutured. Occasionally in animals killed up to thirty days, minute collections of fluid could be detected around both dural substitutes. None of the animals killed after the thirty day period showed any such formation of fluid.

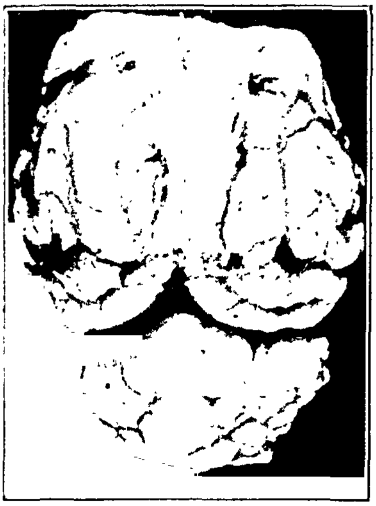

Fig. 5 (cat 95).—Postmortem photograph of polyethylene film which had been in place over the cerebral cortex for six days. Note the lack of gross reaction and the clear visibility of the underlying cortex through the film.

In 3 animals polyethylene was placed over damaged cortex replacing the dura. In 1 of these the cortex was damaged by removal of a piece of tantalum screen, which had been in contact with the cortex for one year and had become grossly adherent to it. This animal was killed twenty-one days after the film had been put in place. In the other 2 animals transcortical explorations of the lateral ventricles had been performed. The operative wound was reexplored after three days in 1 animal and after twenty days in the other. There was no gross reaction to the film in the animal explored after three days, and the presence of the artificial dural covering facilitated the reexploration. In the animals studied twenty days after operation there were adhesions to the neomembrane enclosing the polyethylene film similar to those found beneath normal dura in such circumstances.

Systematic experiments have not been performed to determine the effectiveness of polyethylene film in preventing meningocerebral adhesions over damaged cortex. The tissue response to this plastic is comparable to that observed by Pudenz and Odom[11] to thin tantalum foil. They noted that tantalum foil became encapsulated by a thin fibrous envelope, the under surface of which was adherent to the cortical cicatrix. They did not consider tantalum ideal for the prevention of meningocerebral adhesions; Delarue, Linell and McKenzie[13] have considered tantalum foil unsuitable for this purpose. It is likely that polyethylene film would behave in a similar manner, and a few preliminary experiments have substantiated this view. Further investigation of polyethylene over traumatized cerebral cortex is now being undertaken.

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[10] Beck, D. J. K.; Russell, D. S.; Small, J. M., and Graham, M. P.: Implantation of Acrylic-Resin Discs in Rabbits' Skulls, Brit. J. Surg. **33**: 83-86, 1945.

[11] Pudenz, R. H., and Odom, G. L.: Meningocerebral Adhesions: An Experimental Study of the Effect of Human Amniotic Membrane, Amnioplastic, Beef Allantoic Membrane, Cargile Membrane, Tantalum Foil, and Polyvinyl Alcohol Films, Surgery **12**: 318-344, 1942.

[12] Ingraham, F. D., and Bailey, O. T.: The Use of Products Prepared from Human Fibrinogen and Human Thrombin in Neurosurgery: Fibrin Foams as Hemostatic Agents; Fibrin Films in Repair of Dural Defects and in *Prevention of Meningocerebral Adhesions,* J. Neurosurg. **1**: 23-39, 1944.

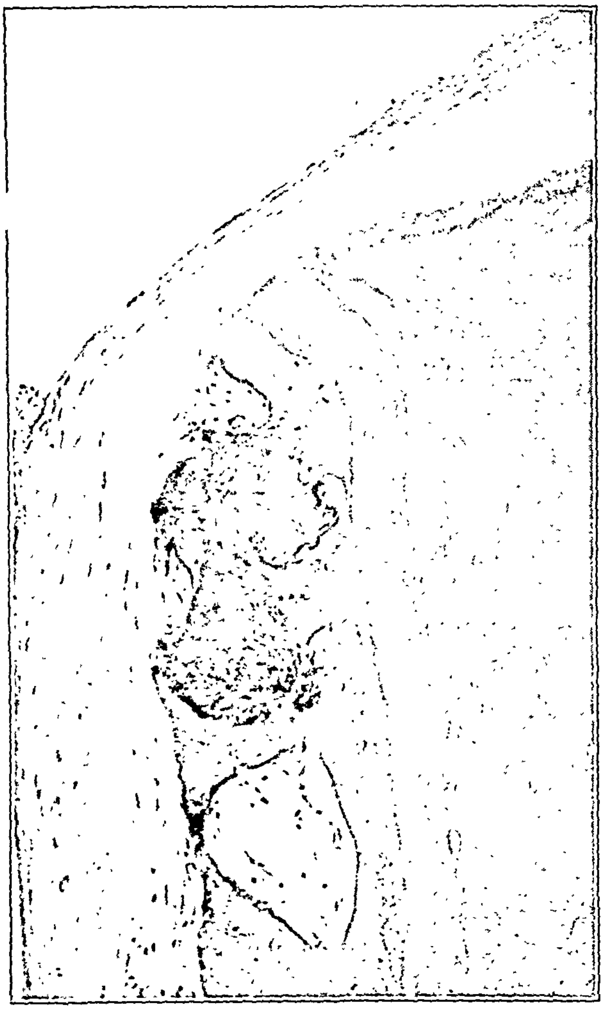

Fig. 6 (monkey 53).—Photomicrograph of the thin fibrous tissue membrane which formed between the cut surface of bone and polyethylene tube placed in a saw cut in the cranium one hundred and ninety-seven days previously (hematoxylin and eosin). Note the smooth surface of the membrane and the lack of foreign body reaction or new bone formation.

Ingraham, Bailey and Cobb[14] have showed that fibrin film placed over damaged cortex aids in the prevention of meningocerebral adhesions, and it is not anticipated that polyethylene film will replace fibrin film in this application. However, polyethylene film, possessing great pliability, low specific gravity, relative transparency and the ability to hold silk sutures securely, should be superior to either fibrin film or tantalum foil as a dural substitute when a watertight closure of dural defects is required. Polyethylene film is much less expensive than tantalum foil and should be an adequate substitute for it in its other surgical uses, such as in the practice of wrapping the site of a nerve anastomosis.

III. *Other Experiments*

Brief mention is also made of the experimental application of polyethylene film to bone. The film is well tolerated in saw cuts in the skulls of animals and shows no tendency to incite foreign body response. It is surrounded in bone by a thin fibrous tissue membrane (fig. 6). These experiments will be reported in detail in a separate publication. Polyethylene film and tubing have also been used in contact with major blood vessels; they do not cause the formation of fibrous tissue or constriction of the vascular lumen.

Narat and Cipolla,[15] also Huelsebusch, Foter and Gibby,[16] found that certain forms of plastic and rubber tubing caused an inactivation of penicillin. Experiments were therefore conducted to determine the effect of pure polyethylene tubing on penicillin. Samples of polyethylene tubing and rubber tubing were left in contact with penicillin twenty-four hours. The effectiveness of the penicillin solution against a standard strain of hemolytic streptococcus was then tested. The polyethylene tubing did not inactivate the antibiotic, the results being identical with the controls. A sample of rubber tubing inactivated the penicillin 15 to 25 per cent. Studies were not made with streptomycin, since in the experiments of Huelsebusch, Foter and Gibby none of the plastics, no matter how impure, had any effect on streptomycin.

COMMENT

There is a great variety of plastic materials available to industry, but only a small number of these can be used within the human body. Up to the present time, no plastic material which can be formed into pliable tubing as a substitute for rubber or into thin film to replace normal membranes in the body has been found. The experiments described in this report suggest that polyethylene in the form of tubing or film can be implanted safely into the tissues, providing pure polyethylene is used.

In neurosurgery the use of the tubing for constant drainage of ventricular or subarachnoid fluid immediately suggests itself. It should also be useful in the drainage of ventricular fluid into the subarachnoid space according to the method described by Torkildsen.[17] The film may well fill the need of a substitute for normal dura when for some reason the dura cannot be used to cover the cortex.

This paper is intended as a report on the experimental application of this interesting and potentially useful material to neurosurgical practice. It has already been used to a limited extent in human patients with completely satisfactory results. Further animal experimentation and clinical trial will determine its value in other fields of surgery.

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[13] Delarue, N. C.; Linell, E. A., and McKenzie, K. G.: An Experimental Study on the Use of Tantalum in the Subdural Space, J. Neurosurg. **1:** 239-242, 1944.

[14] Ingraham, F. D.; Bailey, O. T., and Cobb, C. A., Jr.: The Use of Fibrin Film as a Dural Substitute and in the Prevention of Meningocerebral Adhesions: Further Studies and Clinical Results, J. A. M. A. **128:** 1088-1091 (Aug. 11) 1945.

[15] Narat, J. K., and Cipolla, A. E.: Inactivation of Penicillin by Tubing: Preliminary Report, Am. J. Surg. **71:** 667-668, 1946.

[16] Huelsebusch, J. B.; Foter, M. J., and Gibby, I. W.: Effect of Rubber Tubing upon the Stability of Penicillin and Streptomycin Solutions, Science **104:** 479-480, 1946.

[17] Torkildsen, A.: A New Palliative Operation in Cases of Inoperable Occlusion of the Sylvanian Aqueduct, Acta chir. Scandinav. **82:** 117-123, 1939.

CONCLUSION

1. Animal experimentation with a new synthetic plastic material, polyethylene ("polythene") in the form of flexible tubing and film has shown it to be well tolerated in animal tissues when used in pure form. There is no foreign body reaction, the tissue response being similar to that seen in the use of tantalum and methyl methacrylate.
2. Polyethylene does not inactivate penicillin.

SIGNIFICANT TRENDS IN CANCER RESEARCH

STANLEY P. REIMANN, M.D.
Philadelphia

Medicine is applied biology. Medical problems, therefore, are fundamentally biologic problems. This includes cancer, which was recognized as belonging in this sphere many years ago by a few pathologists but, curiously enough, remained with little attention on the part of biologists themselves until quite recently.

Until comparatively recently, cancer was studied mostly in its gross pathologic-anatomic aspects. Better microscopes made possible enunciation of the cell doctrine, whereupon cancer was placed in its true category of being a cellular growth and maldevelopment. Even so, few biologists, in whose fields the problems of cellular growth and development are paramount, recognized the relationship to a sufficient degree to work on it. Virchow's dictum that all cells come from preexisting cells led to a persistent search for cellular beginnings, and the literature teems with demonstrations which often were anything but conclusive as to the exact cellular origin of the various types of cancer.

A serious difficulty faced by pathologists in this type of work is lack of sufficient knowledge of the growth and development of normal cells for comparison. The pathologist studies a tumor as of the instant when it is removed and fixed and from this point tries to figure out what happened when the tumor arose and how it progressed while it was still in the patient. The hazards need no emphasis. To prophesy the future of a given tumor on the basis of what it looks like at one fleeting instant of its life is to assume wishfully that all the variables but one are controlled. Most pathologists now realize this. In the last analysis, prognosis as to the fate of a patient with cancer depends not on the type of cancer, its cellular details, behavior of the cancer cells or the name given to it but on whether or not, in its treatment, every last cancer cell has been removed or destroyed. Some surgeons and/or radiologists still refuse to be radical in the presence of a small cancer or of one said to be of low malignancy. A good maxim is "faint heart never cured cancer patient." Of what use otherwise is the propaganda "come early"?

The need and value of comparing malignant growth with the corresponding normal has been generally admitted only since the end of the first world war. In fact, it is now emphasized that the use of biologic technics offers a most fruitful approach to cancer. The programs of the Cancer Research Association of not so many years ago will be remembered. Cancer itself was studied and mostly in its pathologic-anatomic aspects. The occasional biologic paper on growth and development of normal cells was believed to be "interesting though not applicable." The programs of recent years, however, present biologic, chemical and physical papers in the majority. This is a significant trend. Biologists in general now recognize the cancer problem as one to which they can contribute, and workers in cancer research welcome them into the fold. Pathologists, now fully appreciating the need, keep a weather eye open for studies of normal cell behavior as well as continuing their own studies of pathologic cells.

THE BIOLOGIC APPROACH

The crucial problems in the biologic approach are the differentiation and organization phases of cellular growth. Cancer cells, while differentiating even to high degrees at times, nevertheless show qualitative anatomic differences from corresponding normal cells. Translate this fact from static to dynamic terms. How does the cancer cell get that way? And translate again from this language to chemical and physical terms. Devise methods of quantitative estimation of degrees of differentiation. How far can a cell normal or cancerous differentiate until it can no longer divide? What potencies remain in cells after some of their original complement has been expressed? What environmental chemical factors govern potencies and with what intracellular substances do they react to form what new substances? What are the qualitative changes when a cancer cell or cells originate? What are the enzyme patterns catalyzing these reactions both in the normal and in that "new" cell that is cancerous; in that cell which has undergone "somatic mutation"; in that cell which is no longer quantitatively different but qualitatively?

A similar set of questions is constructed for the organization problem. Cancer cells do not organize into organs and parts as do normal cells. Here the separated problems of blood supply, nerve supply, organizer substances (Spemann), hormones, function (Wilhelm Roux) enter the picture.

The applications of these problems are not only in such general questions as causation but also in details such as origin, cellular patterns, diagnosis and even nomenclature, which should be changed from the weird and confusing words now used to a more logical and accurate language. For example, instead of saying that a squamous cell carcinoma arises from squamous cells, it should be stated that a squamous cell carcinoma arises from but partially differentiated cells and they differentiate out into squamous-like cells.

Another part of the biologic approach which has helped stimulate biologists but also has medical interest is the recognition that cancer is not confined to human beings but has been found in most multicellular organisms. In addition to the spontaneous tumors studied in horses, dogs, fish, turtles, frogs and mice, botanists have shown that much can be learned from plant tumors. As one clinician said, "At least I can tell patients and their relatives that the fundamental cause of their cancer is not too much worry, or eating food cooked in certain pots, or sleeping with their beds east and west, because fish do not eat tinned food, nor do geraniums worry, and yet they too get cancer."

VIRUSES, GENES, NUCLEOPROTEINS

The discovery by Bittner of the transmissible agent in mammary cancer has forced acceptance of the belief that much more intensive study of viruses and cancer must be done. Clearer chemical characterization of the

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From the Lankenau Hospital Research Institute and the Institute for Cancer Research, Inc., Philadelphia 30.

Read in the General Scientific Meetings at the Ninety-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., June 9, 1947.

transmissible milk agent is being made, and coordination with other virus studies and nucleoproteins brings wide fields into focus. X-rays cause mutations in such organisms as Neurospora, yeasts, paramecia which are correlated with their genes, their nucleoproteins, their nutritional requirements and their intermediary metabolism, all points of departure in cancer research.

NUTRITION AND CANCER

Reduction in caloric intake of about one third reduces the expected incidence of breast cancer in inbred susceptible strains of mice but apparently by indirection, for their ovaries, uteri and breasts were atrophic, suggesting pituitary insufficiency. Reduction in caloric intake reduces also the development of leukemia in methyl cholanthrene-painted mice but not if the calories are largely supplied by fat. Other hints are in the literature concerning fats and carcinogenesis but details await further experiment. Protein restriction also nhibits tumor formation but again by indirection. In ief, nothing specific has been found except for a few bstances like dimethyl-amino-azobenzene, which produces cancer of the liver but which are not normal constituents of the diet.

On the other hand, clinical advantage should be taken of the results of general research in nutrition. Patients are better prepared for surgery and/or irradiation by proper attention to diet, and the advanced cancer patient can be made more comfortable.

CARCINOGENS

The story of the carcinogens is a familiar one. Some four hundred compounds are known to produce cancer. There is no general chemical pattern among them. Crucial questions are (1) to find a naturally occurring carcinogen and (2) to characterize the changes in cellular potencies mentioned which are induced by any one of the carcinogens.

Obviously, it is not true to continue saying that we do not know the "cause" of cancer. We know many causes. It depends on what level of language we wish to discuss it.

ISOTOPES

The making available of radioactive and stable isotopes has opened new paths for tracking down the differences between the chemical reactions in cancer and normal tissues by way of their intermediary metabolisms. But to claim that radioactive atoms will eventuate into a "cure" for cancer is somewhat premature. On the other hand, it should not be denied that since such physical agents may produce mutations from the normal to cancer they may do the same for the cancer cell and render it less or perhaps more malignant.

CHEMOTHERAPY

The ideal approach to cancer therapy is to devise measures which will prevent the body from developing an abnormal growth. The next is to devise treatment which will enable the body itself to do away with its malignant growth. Neither surgery nor x-rays and radium fulfil these requirements. Over the years, many substances have been tried, but haphazardly and sporadically. Strangely enough, practically no systematic trials of series of compounds have been made such as resulted in 606 and 914 or as industry tried some 30,000 compounds before a suitable antiknock agent was found for automobiles. Recently, however, groups have been organized along this line. Among compounds tested are the bacterial polysaccharides, colchicine derivatives, nitrogen mustards. Obviously if nothing is tried, nothing will be found. But only those should be used which are justified by experimental results in lower animals. Needless to say, every safeguard must be thrown around patients who are willing for such trials to be made, and they and their relatives must be told of the experimental nature of the procedure. Appraisal of results must be impersonal and objective and only after sufficent time has elapsed.

METHOD OF THINKING—PHILOSOPHY

The foregoing subdivisions by no means exhaust the list; genetics, endocrinology, embryology, statistics and many other subjects contribute to cancer research. Obviously it is necessary to construct an overall picture, not forgetting the clinical aspects. This means there are needed a set of ideas and thoughts; a series of hypotheses; a mode of thinking, so that facts as they come from the various disciplines may be fitted into a rounded whole. This mental exercise is called philosophy, though I fear to use that word. It might hurt the sensibilities of certain scientists who still are not aware of the reconciliation which has occurred during the last half century between science and philosophy. A significant trend in this direction is the fact that within the last six months I was actually asked to speak on the philosophy of cancer.

Is there any doubt that the various facts in cancer should be coordinated, correlated and developed into a whole? Is there any doubt that an integrated program of research should be constructed and definite questions for answer be posed by both clinical and laboratory experiments?

RESEARCH ORGANIZATION

As cancer is fundamentally a biologic problem, a proper research staff must consist of specialists in all subdivisions of biology, among them embryology, genetics, anatomy, biochemistry, biophysics, protozoology, cytology, botany, plus a complete clinical staff. Each group develops its problems and mode of attack within the framework of the overall program adopted. Seminars and conferences keep each informed of the others' results; ideas flow, suggestions emerge, the general program and its separate details are critically examined, altered on justification and thus many angles of the larger problems are attacked.

When the Lankenau Hospital Research Institute was organized in 1925 with a group of specialists to investigate growth and development as fundamental to cancer, the idea received little recognition. Twenty-two years later we break ground for a new building, having outgrown our old quarters and having organized a group called the Institute for Cancer Research. There are a number of other groups now with the same point of view and thus with similar organizations.

SUMMARY

The most significant trends in cancer research are:

1. The recognition that cancer is primarily a biologic problem.

2. The organization of groups (too few as yet for the magnitude of the problem) but at least a few composed of specialists in the most diverse lines of inquiry.

3. The recognition of the need of definite overall programs of research.

Lankenau Hospital.

Clinical Notes, Suggestions and New Instruments

A CLINICAL TEST FOR MIGRAINE

MAX T. SCHNITKER, M.D.
and
MAURICE A. SCHNITKER, M.D.
Toledo, Ohio

A Query and Minor Note in The Journal, Oct. 26, 1946, page 486, stated that "there is no satisfactory method of experimentally inducing attacks of migraine in persons who are susceptible to them." Since 1940 we have been using a test which we find quite specific in precipitating a migraine headache in persons afflicted with them. This test consists in the use of nitroglycerin sublingually.

Migraine is a distinct type of headache and should be separated from so-called histamine cephalalgia, which can be precipitated by the subcutaneous injection of histamine base according to the method of Horton[1] It has been fairly well established by Wolff[2] and his co workers that the basic mechanism of pain in the migraine syndrome is due to the stretching of the cranial arteries, chiefly the extracranial structures (external carotid artery and its branches). This same mechanism obtains in the headache associated with arterial hypertension. Conversely, the headache of histamine cephalalgia, and that associated with fever, is due chiefly to dilatation of the cerebral branches of the internal carotid, the vertebral and the basilar arteries.

In 1938 one of us (M. T. S.) working with Northfield[3] demonstrated that the principal action of histamine in producing headache is on the internal carotid artery and its branches. Similarly, we are accumulating evidence to suggest that the principal effect of nitroglycerin in producing a headache is on the external carotid artery and its branches.

The following may be used as an office procedure in the examination of a patient for headache

With a history typical of, or strongly suggestive of, migraine headache, the patient is made to rest quietly on the examining table, with a sphygmomanometer cuff in place. It is important that a careful neurologic examination has been made to rule out intracranial pathologic conditions. A headache should not be present when the test is begun; if there is slight headache, the test can still have significance. On the other hand, if a typical headache is present the test usually will not give any added information. Finally, to obviate any psychologic effect, the patient is not told that one is going to attempt to reproduce a headache.

After the blood pressure and resting pulse have been recorded, the patient is given two tablets of 1/100 grain (0.6 mg.) size of nitroglycerin (the hypodermic soluble tablet preferred), which constitutes 1/50 grain (1.3 mg.), under the tongue. (Amyl nitrite does not work as well in reproducing the headache in persons subject to migraine.) In the first two minutes there will be little or no change in the pulse, but the blood pressure may rise slightly in some patients. Between the second and fourth minutes the pulse will rise, the blood pressure will usually drop to below the resting level and the patient will begin to complain of symptoms. Without suggestion, or too direct questioning, the conversation of the next few minutes will usually reveal whether the symptom produced is the same as the headache which constitutes the patient's complaint. The patient may then be asked to compare the sensation produced by the tablets with the headache of his complaint. On rare occasions a patient may develop syncope with this procedure, indicating that the dose was too large. One 1/100 grain (0.6 mg.) tablet is then often sufficient to use in a subsequent test. In the vast majority of cases, however, 1/50 grain (1.3 mg.) appears to be optimum and does not produce any untoward effect.

When a patient's symptom has been localized to one area of the head, as frontal, temporal or occipital, that area will usually be the first to manifest typical pain with the nitroglycerin test. A more generalized headache may follow a few minutes later in some persons.

After the patient has thus been given a headache, it is only right that it be relieved; this can usually be done easily by firm compression of the carotid artery on the involved side for one or two minutes. If that does not give prompt relief the patient may be given 100 per cent oxygen to breathe for five minutes or a solution of 0.5 to 1 mg. ergotamine tartrate intravenously. On the other hand, if the patient is left to rest quietly, with no attempt made to relieve the headache, it will usually disappear spontaneously in ten or fifteen minutes.

Often the production of the headache with the nitroglycerin and its prompt relief by carotid compression are so striking that at this point an obvious psychologic effect comes into play. For the patient now feels that the physician understands the mechanism of the headache.

If the test has reproduced the patient's typical headache, the procedure is stopped at this point. In the event that the nitroglycerin has not reproduced the typical symptoms, the patient is allowed to rest for fifteen minutes and is then given the subcutaneous histamine test according to the method of Horton. If this reproduces the patient's symptom, the diagnosis of histamine cephalalgia is made. He is then given 2 or 3 minims of a 1 : 300,000 solution of epinephrine intravenously to terminate the attack, and a program of histamine desensitization is outlined. Thus, the entire procedure can be carried out in no longer than thirty minutes if both tests are done, in ten to fifteen minutes if the nitroglycerin test alone is used.

In correlating the results of the nitroglycerin test with (1) a typical history of migraine and (2) the results of treatment for migraine, we have found the test uniformly satisfactory in over 250 cases. To put it in another way, in those cases in which the nitroglycerin test has reproduced the headache, good results have been obtained by treating the patient for migraine. This has consisted chiefly in the administration of 10 grains (0.65 Gm.) of calcium lactate twice a day, the use of a sedative, such as 1/2 grain (0.03 Gm.) of phenobarbital twice a day, the elimination of allergenic substances when they can be discovered (particularly coffee, chocolate, beans, peanuts and coca-cola) and the use of ergotamine tartrate, 2 to 4 mg. under the tongue, at the onset of an acute attack.

Since pain is entirely a subjective phenomenon, the success of the test lies solely in the ability of the person to identify the headache produced by the nitroglycerin in comparison with his former complaint. This is astonishingly accurate in most patients, particularly in the more intelligent group in which migraine is most prevalent. The nitroglycerin test will not reproduce the headache of a nervous tension state with its dull or binding type of pain due to spasm of the occipitofrontalis muscle. Nor will the nitroglycerin test reproduce the headache of the post-traumatic cerebral contusion syndrome, which is a dull ache with intermittent, sharp, shooting pains situated deeply and usually associated with dizziness. However, the sharp, throbbing pains of the scalp (traumatic migraine) that are localized to the site of an injury along the course of one of the extracranial arteries are usually reproduced accurately by the administration of nitroglycerin, as would be expected. Since most atypical facial neuralgias are of vascular origin, due to distention of the external carotid branches, they are similarly reproduced by the nitroglycerin test. In contrast, true trigeminal neuralgia (tic douloureux) is not precipitated by this procedure.

In summary, we have found that the sublingual administration of nitroglycerin, 1/50 grain (1.3 mg.), in the form of soluble tablets is a highly satisfactory method for the experimental production of migraine headache in persons who are susceptible.

1031 Secor Hotel Building, Jefferson at Superior.

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EPINEPHRINE IN CARDIAC RESUSCITATION

HENRY K. BEECHER, M.D.
and
ROBERT R. LINTON, M.D.
Boston

In the use of epinephrine in cardiac resuscitation evidence is at hand to show that the effective stimulus is not always the needle prick of the heart wall, as has often been asserted but that the epinephrine itself is important. It may be well to mention also the frequency with which dangerous doses of this agent are used.

The technics of cardiac resuscitation continue to offer much material for debate. Arguments for or against the importance of a given practice have not yet been settled by direct observation in man in many instances. In cases in which it is possible to make direct observations it is important to report the evidence.

REPORT OF CASE

The following case illustrates that the needle prick and massage were not adequate to revive a heart that had failed. The injection of epinephrine and massage of the heart proved adequate on two occasions.

A girl aged 4½ years entered the Massachusetts General Hospital with a diagnosis of the tetralogy of Fallot (ventricular septal defect, pulmonary stenosis or atresia, dextraposition of aorta and hypertrophy of the right ventricle). Physical examination revealed that she was poorly nourished and cyanotic, with clubbing of fingers and toes. The veins of the scleras, forehead and distal parts of the extremities were dilated and tortuous. Polycythemia was present (hematocrit reading 69 per cent, arterial oxygen saturation 62 per cent). The heart was enlarged, and a roentgenogram showed the narrow base typical of the tetralogy of Fallot. The electrocardiogram showed axis deviation to the right. No murmurs were heard, and some doubt as to the correctness of the admission diagnosis was expressed. It was decided, however, that the patient deserved surgical exploration.

After the administration of 0.32 mg. atropine as a preanesthetic medicament, nitrous oxide with 20 per cent oxygen was used as a preliminary to ether-oxygen anesthesia with closed respiratory system, which included a "to and fro" carbon dioxide filter. The sequence of events was as follows:

At 8:35 the induction of anesthesia started. At 8:45 the trachea was intubated under direct vision through the mouth. The blood pressure was 90 systolic and 65 diastolic; pulse rate was 168. At 9:20 surgical intervention began. The blood pressure was 90 systolic and 60 diastolic. The pulse rate was 190. At 9:38 the pleura was opened. The anesthetist commented that the patient did not seem to tolerate the open chest well. The surgeon was notified.

At 9:55 the heart suddenly stopped; respiration continued. The heart was massaged. The right auricle was repeatedly stuck with a needle; no spontaneous effect resulted from this type of stimulation.

At 10:25, after thirty minutes of cardiac failure, while life was sustained by cardiac massage, 0.2 cc. of 1:1,000 epinephrine hydrochloride solution diluted in isotonic solution of sodium chloride to 2 cc. (1:10,000 concentration) was injected into the right auricle while massage was continued. The heart immediately showed imperfect beats, and in five minutes it appeared to be beating normally. At 10:30 the operation was resumed. At 10:58 cardiac standstill recurred. Massage of the heart again was carried out without any restoration of spontaneous activity, and the heart wall was stimulated by needle pricks for a twelve minute period. No spontaneous effect resulted from this. At 11:10 epinephrine hydrochloride (same dosage as previously used) was injected into the right auricle with immediate effect on the heart. In a few minutes this led to the reestablishment of an apparently normal rhythm. The right pulmonary artery was exposed and found to be exceedingly small, about 3 mm. in diameter. The right innominate artery was exposed and seen to be decidedly short, about 1 cm. in length. The subclavian artery was freed, and it was planned to use this in the anastomosis. At 11:50 because of the patient's general condition it was decided to carry out the operation in two stages. At the end of the operation the patient's blood pressure was 100 systolic and 60 diastolic; the pulse rate was 160.

Subsequent to the operative procedure the blood pressure fell slowly; the pulse became thready and the respirations gasping. The patient died four hours after operation. Autopsy confirmed the diagnosis of tetralogy of Fallot with pulmonary stenosis, ventricular septal defect, patent foramen ovale, dextraposition of aorta and hypertrophy of the right ventricle.

COMMENT

Twice, after periods of cardiac standstill of thirty and twelve minutes, respectively, epinephrine produced resuscitation of the heart although needle pricks had failed to do so. It is often stated with assurance that the benefit to be derived from cardiac injections is to be explained by the stimulation resulting from the needle prick. In this case the epinephrine appeared to be the effective agent on two occasions after repeated needle pricks had failed.

When epinephrine is employed in cardiac resuscitation, doses that seem to us to be dangerously large (namely, 1 cc. of 1:1,000 solution of epinephrine hydrochloride) are often used, with the hazard of production of ventricular fibrillation. The dose used here was possibly larger than that desirable in a child. In adults who have impaired hearts, and any heart in standstill is at least acutely impaired, it is doubtful if more than 0.2 to 0.3 cc. of 1:1,000 solution of epinephrine hydrochloride ought to be used, and this should be diluted ten times before injection into the right auricle. (This may be introduced by way of the right jugular vein.) Accompanying massage of the heart is probably of great importance. Of course oxygenation should be maintained by artificial respiration with an oxygen-rich atmosphere, and the falling blood pressure should be supported by transfusion.

More case reports of this nature are desirable to add to our accumulated experience concerning this important problem.

ADDENDUM

Since this report was submitted for publication a second case has come to our attention: In the course of a pneumonectomy on a man aged 45 the main bronchus was opened. Shortly after the period of accompanying anoxia the heart failed. Artificial respiration and massage of the heart kept the patient alive. During the subsequent fifty-three minutes the heart was pricked with a needle, procaine was used, and the heart stimulated electrically. Of these, only the latter agency produced a transient series of a few imperfect beats. However, fifty-three minutes after the heart had stopped the dose of epinephrine referred to was injected into the right auricle, with prompt resumption of fairly regular but very weak action. For a brief period the radial pulse became palpable. Twenty minutes later another dose of epinephrine was injected into the heart, with some strengthening of the heart's action. Over the next half hour the heart failed completely and the patient died. All one can say in this case is that the epinephrine appeared to be more effective than the other means used to revive the heart. Whether earlier use would have been more effective one cannot say. Possibly it would.

From the Department of Anesthesia and the West Surgical Service of the Massachusetts General Hospital.

POISONING DUE TO TINCTURE OF RHUS TOXICODENDRON

HARRY LOWENBURG Jr., M.D.
Philadelphia

In 1866 Dr. J. W. Moorman of Hardinsburg, Ky.,[1] reported the cases of 2 children who each ate about 1 pint (550 cc.) of the fruit of Rhus toxicodendron, or poison ivy. In a few hours they became drowsy and stuporous, and in a short time vomiting commenced. The vomitus at first consisted of the partially digested fruit, and this was followed by a thick tenacious fluid the color of red wine Generalized convulsions then appeared accompanied by delirium The respiratory rate was hurried, the pulse weak and rapid and the pupils dilated. Emesis was induced, and a solution of sodium carbonate was freely administered. Both children recovered. In 1867 there was reported[2] the case of a boy who drank tea made from the root of R. toxicodendron. He became delirious, and there developed nervous twitchings, watery eyes, an intense burning sensation in his stomach and an intolerable cutaneous itching which was accompanied by a measleslike rash and high fever. He recovered. In 1852 a medical student took 1 gill (118 cc.) of a strong concoction of the leaves and vines of R. toxicodendron after supper.[3] The following morning his face was swollen; he slept nearly thirty-six hours In 1921[4] Alderson reported fatal results among Indians and Mexicans from eating the leaves of the poison oak plant, Rhus diversiloba.

Since the introduction in recent years of the use of extracts of R. toxicodendron for oral immunization against poisoning due to ivy and sumac there have been many reports of local and systemic reactions.[5] These are (1) local irritations of the skin and mucous membrane which come in direct contact with the extract and (2) generalized pruritus with or without a rash, especially about the anal region. There have been no reports in the modern literature of toxic reactions approximating those in the cases previously cited.

A major toxic reaction and near tragedy are the subject of this report. These occurred in a patient who presented a most perplexing problem in differential diagnosis.

REPORT OF CASE

History.—J. S., a white boy aged 11, was admitted to the Jewish Hospital at 12:30 a. m. on May 5, 1946 with a chief complaint of headache, nausea and vomiting of twenty-four hours' duration.

Past Medical History.—In 1942 the patient was seen because of a complaint of enuresis. It was noted at that time that he was small for his age and that his speech was slightly slurred. Further investigation revealed a bilateral congenital stricture of the ureterovesical junction. This was associated with a slight hypertension (blood pressure 120 systolic and 80 diastolic) and an elevated blood urea nitrogen (32 mg. per hundred cubic centimeters). Enlargement of the ureteral orifices with the electric knife (Dr. John B. Lownes) was followed by an immediate return of the blood pressure and blood urea nitrogen to normal limits. Within the next six months he grew 2½ inches (6.4 cm.) and his speech cleared. Culture of the urine revealed a nonhemolytic streptococcus, which promptly recurred after chemotherapy. The bacilluria persisted over the years, but there were no local or systemic reactions at any time. The enuresis disappeared. On two occasions the vesicoureteral junctions were dilated under general anesthesia (Dr. Meredith Campbell). The first dilatation on Oct. 8, 1945 was followed on the next day by urticaria that was confined to the region of the face where the anesthestic mask had been secured in place and to the penis where manipulations had occurred. This urticaria was obviously of traumatic origin in a hypersensitive person. The last dilatation was done on April 25, 1946, ten days prior to the onset of the present illness. At that time culture of the urine revealed Bacillus pyocyaneus. At frequent intervals throughout his life there developed on the patient's extremities severe rashes which resembled those of dermatitis venenata due to poison ivy. He complained of itching about the buttocks two weeks before the onset of the present illness, but no cause for it could be determined at that time. Unknown to me until thirty-six hours after his admission to the hospital was the fact that the patient had been taking increasing doses of tincture of R. toxicodendron by mouth at irregular intervals for a period of seven weeks.

History of Present Illness.—At 4 p. m. on May 4, 1946 the patient complained of chills and had a rectal temperature of 105 F. Physical examination at that time revealed questionable impairment to percussion and suppression of breath sounds over the left side of the chest. The patient did not appear seriously ill, and 5 grains (0.32 Gm.) of aspirin (acetylsalicylic acid) was given. Shortly thereafter the temperature fell to 101 F., and the decline was accompanied by profuse perspiration. At 8 p. m. the temperature again rose to 105 F., and physical examination revealed no change. Sulfonamide compounds were ordered in full dosage, and additional acetylsalicylic acid was administered. The temperature promptly subsided, but at 11:30 p. m. the patient vomited a wine-colored material and experienced another chill, with a rise in temperature to 106 F. He was sent to the hospital in an ambulance and had a rectal temperature of 101 F. on admission one hour later.

Course in Hospital.—Physical examination on admission revealed a white boy of about the stated age who was in no acute distress. He was intelligent for his age and extremely cooperative. There were no rashes, but a slight bluish mottling was noticeable over the entire cutaneous area. There was no evidence of twitching or other outward manifestations of a neurologic disturbance. Examination of the eyes, ears, nose and throat revealed essentially normal conditions. There was questionable impairment of the left side of the chest to percussion and suppression of the breath sounds in that area. The heart was normal except for the rate, which was 110 at the apex. The abdomen presented no masses or enlarged organs. The genitalia were normal, as were the extremities. There were no glandular symptoms. Neurologic examination was completely normal. A working diagnosis of pneumonitis involving the left side of the chest was made.

Because of the capricious fever and the suggestion of an imminent state of shock a continuous venoclysis of 5 per cent dextrose in isotonic solution of sodium chloride was immediately begun. Penicillin, 30,000 units, was given subcutaneously.

At 2 a. m. the patient was resting comfortably. The temperature was 103 F., but the pulse rate was 160. At 2:30 a. m. there suddenly developed a chill, which was shortly followed by a generalized clonic convulsion. At 3 a. m. the temperature was 107 F. The convulsive seizures were continuous and were accompanied by severe vomiting. The vomitus was wine colored. At 3:30 a. m. the temperature was 109.2 F., the pulse rate 160 and the respiratory rate 64.

Ice packs were immediately applied. Continuous oxygen with the B. L. B. face mask was administered. Other emergency measures included gastric lavage with sodium bicarbonate, the administration of adrenal cortex, 5 cc. intramuscularly; phenobarbital, 3 grains (0.19 Gm.) intravenously; paraldehyde, 10 cc. intramuscularly, calcium gluconate 10 per cent, 10 cc. intravenously, and caffeine sodium benzoate, 7½ grains (0.48 Gm.) subcutaneously. The continuous venoclysis was discontinued with the onset of the first chill because of the possibility of pyrogens, but the extreme shock made it imperative to immediately start another.

At 4 a. m. the temperature was 105.4 F., the pul [illegible] and irregular to count. The blood pressure [illegible] unobtainable. At 5 a. m. the [illegible] peratur[illegible] was 104 [illegible] rate 170 and the respiratory [illegible]. At [illegible] m. [illegible] was 104.8 F., the pulse rat [illegible] d th [illegible]

From the Jewish Hospital.

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Following the administration of paraldehyde the convulsions ceased (about 5 a. m.) and the extremities were spastic. Respirations remained labored, and the oxygen and face mask was discontinued, as it was considered that the patient was rebreathing an excessive amount of carbon dioxide and there was no severe cyanosis. This was rewarded with an improvement in the respiratory rate. During this period musical rales were heard throughout the chest and the breath sounds were suggestive of an asthmatic type of breathing.

Because of the history of infection of the urinary tract and retrograde pyelography ten days before admission, it was thought that the entire clinical state of the patient could be caused by an acute form of pyelonephritis with septicemia. For this the patient was given massive doses of penicillin by all parenteral routes and 40 grains (2.59 Gm.) of sulfadiazine sodium intramuscularly. With the knowledge that B. pyocyaneus had been present in the urine, streptomycin was obtained and 100,000 units was given every three hours. The administration of adrenal cortex was repeated every few hours because of the possibility of a Waterhouse-Friderichsen syndrome and the vasomotor collapse.

Laboratory Data

Urine

	*p*H	Albumin	Sugar	Acetone	White Blood Cells	Red Blood Cells	Culture
5/ 5/46	5	+2	Trace	Neg.	5 to 7	Occ.	
5/10/46	6	Neg.	Neg.	Neg.	4 to 5	4 to 5	
5/ 7/46	..	.....	.....	.....	......	......	B. pyocyaneus
5/11/46	..	.....	.....	.....	......	......	No growth
5/15/46	..	.....	.....	.....	......	......	No growth
5/21/46	..	.....	.....	.....	......	......	No growth

Blood

	Hb. Gm.	Red Cells, Millions	White Cells, 1,000's	Polymorphonuclears, %	Monocytes, %	Lymphocytes, %	Culture
5/ 4/46	....	....	....	..	..	..	No growth in 30 days
5/ 5/46	....	....	....	..	..	..	No growth in 30 days
(9 a.m.)	18.5	5.59	18.3	82	1	17	
(3 p.m.)	15.5	4.39	11.1	83	2	15	
5/ 7/46	16	5.00	15.5	80	1	19	
5/11/46	16	5.10	11.0	59	1	40	

	Urea Nitrogen, Mg./100 Cc.	Sugar, Mg./100 Cc.	CO_2, Vol. %
5/ 5/46	23	..	..
(7 a.m.)	..	..	37
(3:30 p.m.)	..	..	41
5/10/46	12	95	..

Spinal Fluid

Pressure, 30 mm. H_2O

5/5/6 4 white blood cells, few red blood cells

Protein	*10 mg./100 cc.*
Sugar	10.4 mg./100 cc.
Chlorides	862 mg./100 cc.
Colloidal gold	1111100000
Culture	No growth 48 hrs.
Wassermann test	Negative

Stool Culture

B. coli

Roentgenogram

5/8/46 Portable chest: increased pulmonic markings of vascular origin; otherwise negative

Electrocardiogram

5/8/46 Sinus arrhythmia

The patient's condition remained extremely critical for the next forty-eight hours. At 10:15 a. m. on May 5, 1946 his respirations ceased. Artificial respirations were immediately begun, and 1.5 cc. of nikethamide was given intramuscularly. The respiratory rhythm was restored; it remained irregular for about a half hour and gradually returned to an even rate of about 60 per minute. At 2 p. m. 350 cc. of whole citrated blood was given slowly by the intravenous route. The patient reacted well to this procedure, and an additional 250 cc. was given at 6 p. m. The temperature remained between 103 and 104 F., gradually subsiding to 101 F. at midnight on May 5, 1946. At this time the pulse rate was 140 and the respiratory rate 38. The blood pressure was 110 systolic and 66 diastolic.

For the ensuing forty-eight hours the temperature, pulse rate and respiratory rate slowly returned to normal. The patient was in a deep stupor, but he could be aroused and would attempt to follow simple commands. He was able to swallow water but was incontinent of urine and feces. His general condition improved rapidly and the spasticity of his extremities disappeared, but he retained evidence of damage to the central nervous system, as described in the neurologic report:

Neurologic Examination.—Neurological examination by Dr. Bernard Alpers on May 9, 1946 revealed the following: The boy was alert and responsive. There was two-thirds ptosis of both eyelids. The pupils were slightly dilated and reacted promptly to light over a small arc. The optic nerves were well defined and had good color. The retinal vessels looked healthy. The patient had complete paralysis of upward gaze and of near convergence. He rotated the eyeballs horizontally but the range did not come out to either the inner or outer canthus completely. The corneal reflexes were decreased. There was weakness of the orbicularis palpebrarum and probably some weakness of the muscles of facial expression. The tongue protruded in the midline.

The patient had feeble handgrips but good power of the arms and the right leg. The left leg was weak. The finger-nose test was carried out slowly and fell short of the goal bilaterally. The heel-knee test was not carried out. There was no dyssynergia. The biceps, triceps and radial reflexes were not obtained. The patellar and achilles reflexes were decreased. The abdominal reflexes were absent. There were no pathologic reflexes. Pain position and vibration senses were normal.

The impression was gained that this boy had paralysis of upward gaze, near convergence and decreased power of the left leg. In addition he had decreased corneal reflexes and absent arm reflexes. He had evidence of a lesion in the superior collicular, periaqueductal and hypothalamic region. It was believed that he had a hemorrhagic encephalitis and an encephalopathic condition associated with intoxication due to R. toxicodendron. It was not believed that he had an infectious focus of encephalitis. His condition was considered compatible with recovery.

The patient underwent a transient change in personality, the return of which to normal was accompanied by an amazingly rapid and complete recovery of the use of all his ocular muscles. The weakness of the left leg similarly disappeared. On May 21, 1946 he was discharged, completely cured.

COMMENT

During the first thirty-six hours of the patient's illness the cause of the dramatic course of events was obscure. On the basis of the history of congenital defect of the urinary tract, chronic bacilluria and surgical manipulation ten days prior to the onset of symptoms a diagnosis of acute septicemia seemed justifiable, and treatment was mainly directed toward the cure of this disease. However, the wine-colored vomitus, extreme hyperpyrexia and manifestations of involvement of the central nervous system were not satisfactorily explained. The mystery was deepened when the blood and spinal fluid cultures were reported negative. The parents were carefully questioned, and it was then discovered that the boy had been taking increasing doses of tincture of R. toxicodendron by mouth. After his recovery the patient volunteered the information that he would forget to take the drops for a few days but add the drops for the missing days to the succeeding dose. The last dose, the day before this illness, was 57 drops (about 3.5 cc.). The maximum dose recommended on the manufacturer's label for adults is 5 drops three times daily in half a glass of water. The patient stated that he used only a little water to get it over with quickly. There had been an interval of ten days without drops, and the dose was stepped up by the patient from 45 to 55, 56 and 57 drops on successive days just prior to his admission.

Several dermatologists familiar with the use of this drug and the manufacturers were consulted, and they were not familiar with any patients with a similar response. However, all other possible etiologic factors were eliminated, and knowing this boy's extreme hypersensitivity I cannot help but be convinced that the drug was the sole cause of this remarkable episode. In retrospect it must be admitted that the pruritus of which the patient began to complain two weeks prior to the onset was in fact a mild toxic reaction to the drug. The patient then desisted from taking the drops for about ten days, following which he resumed the medicament at a comparably higher dosage. For thirty-six hours prior to the onset of fever the patient complained of nausea, which undoubtedly was due to gastritis. This became hemorrhagic, which explains the wine-colored vomitus. The subsequent neurologic evidence of damage in the periaqueductal region denotes either a direct effect of the toxin in this area, which involved the temperature control center, or an allergic outpouring, which produced the same result as that described by Kennedy. The complete recovery of the patient is a point in favor of the latter mechanism. The asthmatic type of breathing and the evidence of pulmonary edema are also consistent with an acute allergic reaction.

Urushiol is the active chemical factor common to ivy, sumac and lacquer trees. Stevens[5a] has stated that standardization of extracts can only be approximated because urushiol has not been obtained as a uniform product by the various methods of extraction. In addition Goldman[6] has stated that the definition of the correct dose in the use of tincture of R. toxicodendron is difficult because of varying sensitivity among different persons. He obtained cutaneous reactions or pruritus in 16 of 18 children who took an initial dose of 3 drops of the tincture a day.

Note.—Since his recovery the patient has experienced two severe attacks of dermatitis venenata due to poison ivy.

SUMMARY

1. A case of poisoning from an overdose of tincture of Rhus toxicodendron is reported in a boy aged 11. There developed a temperature of 109.2 F., gastritis and damage to the central nervous system. Recovery was eventually complete.

2. Extreme caution should be exercised in the administration of tincture of Rhus toxicodendron by mouth.

PARALYSIS OF THE BLADDER IN POLIOMYELITIS

ROBERT B. LAWSON, M.D.
and
FRED K. GARVEY, M.D.
Winston-Salem, N. C.

Since we are now entering a new season of increased incidence of poliomyelitis, this preliminary report is being made regarding the use of furfuryl trimethylammonium iodide ("furmethide") for one of the complications of this disease, paralysis of the bladder. The bladder is involved in 10 to 20 per cent of all patients with poliomyelitis, with more involvement in adults than in children. Usually this is manifested by distention and inability to void, but overflow dribbling may occur, and occasionally there may be hyperirritability of the vesical neck with frequency and dysuria. This disability may be overcome in some patients with the aid of hot applications to the area of the bladder and other nonspecific measures. However, many patients need to be catheterized one or more times before spontaneous voiding reappears, although eventually all do recover.

During the 1944 poliomyelitis epidemic in North Carolina we were again impressed with the desirability of trying to avoid catheterization in patients with poliomyelitis. An attempt to cause emptying of the bladder by the use of parasympathetic stimulation was therefore tried. Neostigmine methylsulfate, physostigmine salicylate and acetyl-beta-methylcholine chloride ("mecholyl chloride") may be used for this purpose, but usually the effect of these drugs on the bladder is not apparent before other troublesome side effects become evident. For this reason we chose furfuryltrimethylammoniumiodide[1] a new parasympatheticomimetic drug with particular action on the bladder.[2]

The results with this drug are illustrated in the following 2 case reports of 2 of the patients treated in this series.[3]

REPORT OF CASES

Case 1.—J. M., a boy aged 5½ years, was admitted to the Hickory (North Carolina) Emergency Polio Hospital on June 26, 1944 with typical signs of poliomyelitis. The onset of the illness was five days before admission, characterized by fever and sore throat. Lumbar puncture three days before admission revealed 110 white cells, the type not known. On the day of admission paralysis of the legs and difficulty in voiding were noticed. On admission there was found decided stiffness of the neck and back, moderate weakness of the right leg and pronounced weakness of the left leg. Shortly after admission treatment of the muscular spasm with hot packs was started. The child voided three times during the first day, but the bladder never emptied.

When first seen by one of us on the next day (six days after onset) he had not voided for nine hours, and the bladder reached the umbilicus. Attempts to make him void by hot applications and suprapubic pressure were unsuccessful. At this time 2 mg. (0.4 cc.) of furfuryl trimethylammonium iodide were given subcutaneously. In three minutes the bladder was noted to be contracting, and immediately thereafter the child voided approximately 420 cc. of urine. Four hours later he was given 5 mg. of the drug by mouth and voided again. There was no further difficulty with voiding.

Case 2.—S. M., a boy aged 22 months, who weighed 25 pounds (11.3 Kg.) was admitted to the pediatric service of the North Carolina Baptist Hospital on March 1, 1947. The onset of his illness began four days before admission and was characterized by fever, irritability and general malaise. The day before admission he was noticed to be limping. On admission he was moderately ill, his neck and back were stiff and his right leg was weak.

Lumbar puncture revealed a slight increase of pressure, a negative Pandy test, 1 polymorphonuclear leukocyte and 29 mononuclear leukocytes. He had voided freely before admission and once after admission, but on the second day he had been unable to void for thirteen hours, and his bladder became distended to the umbilicus. At this time he was given 1.5 mg. (0.3 cc.) of furfuryl trimethylammonium iodide subcutaneously without the occurrence of voiding or other parasympathetic manifestations. Two hours later he was given 2.5 mg. (0.5 cc.) of the drug subcutaneously. Within five minutes he voided 345 cc. Four hours later, his bladder was again distended and he could not void. Approximately five minutes after he received 2.5 mg. (0.5 cc.) of the compound subcutaneously he again voided approximately 300 cc. The following day he voided spontaneously. He had no further trouble voiding.

Subcutaneous Dosage of Furmethide

Age of Patient	Dose
0 to 4 yrs.	1.25 to 2.5 mg.
5 to 9 yrs.	2.00 to 3.0 mg.
10 to 14 yrs.	2.50 to 5.0 mg.
15 to 19 yrs.	2.50 to 5.0 mg.
Over 20 yrs.	5.00 to 7.0 mg.

COMMENT

Twenty-five patients with paralysis of the bladder from poliomyelitis have been treated with furfuryl trimethylammonium iodide subcutaneously with complete voiding in less than fifteen minutes in over 70 per cent of the cases. Most of the failures occurred early in this study and can be explained on the basis of inadequate dosage or previous repeated catheterizations.

This drug is available in ampules containing 5 mg. per cubic centimeter for subcutaneous use. The tentative dosage schedule we are using is shown in the accompanying table. The smaller dose should be given initially in order to avoid overdosage. If voiding, flushing or sweating do not follow the subcutaneous administration of the smaller dose, the larger dose may be give

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5. (*a*) Stevens, F. A.: Status of Poison Ivy Extracts, J. A. M. A. **127:** 912 (April 7) 1945. (*b*) Goldman, L.: Reactions Following the Therapeutic Use of Poison Ivy Antigen, J. Med. **20:** 294 (Sept.) 1939.

6. Goldman, L.: Oral Prophylaxis of Poison Ivy Dermatitis in Children, Am. J. Dis. Child. **64:** 241 (Aug.) 1942.

From the Departments of Pediatrics and Urology of the Bowman Gray School of Medicine of Wake Forest College and the Pediatric Service of the North Carolina Baptist Hospital.

[1] The "furmethide" used in this study was supplied by Smith, Kline & French Laboratories, Philadelphia.

[2] Fellows, E. J., and Livingston, A. E.: Pharmacology of Certain Furfuryl and Tetrahydro-Furfuryl Ammonium Iodides, J. Pharmacol. & Exper. Therap. **68:** 231-246 (Feb.) 1940. Beaser, S. H.; Lipton, J. H., and Altschule, M. D.: Further Experience with Furfuryl-Trimethyl Ammonium Iodide (Furmethide) in the Treatment of Urinary Retention Due to Bladder Atony, Am. J. M. Sc. **206:** 490-497 (Oct.) 1943.

[3] We wish to express our appreciation to Dr. ul, Director of the Hickory Emergency Polio Hospital, pera the members of his staff in this study.

in thirty to sixty minutes (as in case 2). Minor unpleasant side effects of this drug are sweating and feelings of chilliness. One or both of these occurred in 5 of our patients, but none of these was alarming. Severe effects which might follow overdoses of the drug are lacrimation, salivation, prostration and dyspnea. These effects can be easily corrected by the subcutaneous administration of atropine.

Furfuryl trimethylammonium iodide is also available in tablet form for oral use, which requires about four times the subcutaneous dose to effect emptying of the bladder, but the drug is not as dependable by this route. Further studies are being made on the oral use of this agent and will be reported in a more comprehensive report at a later date.

SUMMARY

By the use of furfuryl trimethylammonium iodide ("furmethide"), a new parasympathetic stimulating drug, catheterization can be avoided in most patients with paralysis of the bladder from poliomyelitis.

Council on Pharmacy and Chemistry

REPORT OF THE COUNCIL

TISSUE REACTIONS FROM ANTIGENS

The Council has adopted the following report for publication. In expressing appreciation to Dr. Ehrich for his excellent paper, the Council desires to emphasize certain points for consideration, relating to a discussion of adverse effects following the introduction of foreign antigens into the body, namely: local antibody formation; local damage; inflammatory proliferation; amelioration by the lessening of rapid spread; freedom from bias in the determination of optimal dosage; and the danger of hypersusceptibility. Observance of these and other factors is necessary for attainment of the proper use of antigens and for stimulation of constant research toward new ideas and continued advance in therapeutics. Austin Smith, M.D., *Secretary*.

THE SIGNIFICANCE OF THE TISSUE REACTIONS CAUSED BY ANTIGENS

WILLIAM E. EHRICH, M.D.
Philadelphia

With the introduction of polyvalent vaccines into medicine, the question has been raised whether or not it is safe or profitable to prescribe such vaccines. As antigens are not inert, large quantities of bacterial cells may be expected to have damaging effects. Where is the borderline of safety? Also of concern is the question whether the simultaneous introduction of several antigens produces the same degree of protection per antigen as the isolated administration of these antigens at different times. In brief, what is the optimal procedure of administering antigens? As this is an important question, I was glad to fill the request of the Council on Pharmacy and Chemistry to undertake an inquiry into certain experimental evidence involved in this problem, with special consideration of the various mesenchymal reactions that may be caused by antigens.

The introduction of an antigen into a tissue causes, as is generally known, an inflammatory reaction. Depending on the nature of the antigen and the immunologic status of the host, the reaction at the site of injection may be dominated by the presence of granulocytes or macrophages or both; or lymphocytes and plasma cells may be the predominating elements. While these changes take their course, antigenic material is carried through the afferent lymphatic vessels to the regional lymph node, where at first it causes accumulation of granulocytes or macrophages, or both, but soon produces decided proliferation of lymphocytes and possibly also of plasma cells; the lymphocytes are subsequently carried through the efferent lymphatic vessel via the thoracic duct into the general circulation.

The significance of these phenomena now appears to be clear. The granulocytes and macrophages phagocytize and digest formed antigenic material. One to two days after the injection of bacteria large quantities of dissolved antigen can be demonstrated locally in the tissue and in the efferent lymphatic vessel.[1] The reaction in the lymph node, on the other hand, is associated with the production of antibody; this begins to appear here on the third or fourth day and reaches its highest concentration on the sixth or seventh day after injection of the antigen;[2] at the place of injection, antibody titers remain low. These various observations indicate that the proliferation of lymphocytes and possibly also of plasma cells in the regional lymph node are morphologic expressions of good antibody response.

It is common knowledge that an inflammation may lead to hemorrhage, necrosis, suppuration or other undesirable changes locally or in the regional lymph node. Where precisely to draw the line between safety and damage, however, is not certain. There may be considerable overlapping of these two effects. It would be desirable to know which reactions are safe or profitable locally and in the regional lymph node. This may now be determined by injecting various doses of various antigens into the foot pads of rabbits and by comparing antibody production in the popliteal lymph node with the morphologic changes here and in the foot pad.

Though the local phenomena are probably the most important mesenchymal reactions that are encountered in the immunization of human subjects, there may be general reactions of the vascular connective tissue as well. The latter are most prominent after intravenous injections, but they have been observed also after intraperitoneal and subcutaneous injections, particularly of antigens that cause necrosis locally or in the regional lymph node.[3] The appearance of general mesenchymal reactions, if caused by subcutaneous injection, may be regarded as a delicate indicator of insufficiency of the local defense mechanism.[4] As these reactions are little known generally, though an important part of the phenomena under discussion here, they will be presented in detail.

General mesenchymal reactions, i. e., general reactions of the vascular connective tissue due to intravenous introduction of antigens, were first recognized by Oeller and Siegmund in 1922. In his first papers[5]

Professor of Histology, Graduate School of Medicine, University of Pennsylvania; Chief, Division of Pathology, Philadelphia General Hospital.

[1] Harris, T. N., and Ehrich, W. E.: The Fate of Injected Particulate Antigens in Relation to the Formation of Antibodies, J. Exper. Med. **84**: 157, 1946.

[2] McMaster, P. D., and Hudack, S. S.: The Formation of Agglutinins Within Lymph Nodes, J. Exper. Med. **61**: 783, 1935. Ehrich, W. E., and Harris, T. N.: The Formation of Antibodies in the Popliteal Lymph Node in Rabbits, ibid. **76**: 335, 1942.

[3] Ehrich, W. E.; Harris, T. N., and Mertens, E.: The Absence of Antibody in the Macrophages During Maximum Antibody Formation, J. Exper. Med. **83**: 373, 1946.

[4] Ehrich, W. E.; Halbert, S. P.; Mertens, E., and Mudd, S.: Mechanism of the Augmenting Action of Mineral Oil on Antibody Production, J. Exper. Med. **82**: 343, 1945.

[5] Oeller, H.: Ueber die Bedeutung der Zellfunktion bei Immunitätsvorgängen, Deutsche med. Wchnschr. **49**: 1287, 1923; Ueber die Bedeutung reaktiv "entzuendlicher Vorgaenge" bei bakterieller Allgemeininfektion, ibid. **357**. 1924; Zur Histopathologie der haematogenen Infektion mit pathogenen und apathogenen Bakterien, ibid., 1924, p. 937.

Oeller described phagocytosis of the injected material by both the reticuloendothelial cells of liver and spleen and the common endothelial cells, particularly of the capillaries of the lungs, with simultaneous transformation of the latter into polymorphonuclear and other leukocytes. These changes were called "endothelial reaction." Later (1925) he[6] described an "adventitial-endothelial reaction" or "general inflammation of the vessel wall" as occurring simultaneously with the endothelial reaction, which was characterized by enormous "lymphoid-plasma cellular transformation" of the vascular connective tissue. There was pronounced cuffing of the blood vessels particularly in lungs, liver and spleen with "very basophilic lymphoid cells with large, clear, round, spindle-shaped or oval nuclei." The lungs also showed "enormous proliferation of the adventitial cells of the capillaries causing thickening of the alveolar septa" and in some animals "enormous proliferation of endothelium, resembling endarteritis and endophlebitis." If the antigen was in solution the first (endothelial) reaction did not develop. While the first reaction reached its peak five to ten minutes after injection, the second reaction did so in thirty to sixty minutes. After twenty-four hours both had disappeared.

As to the nature of the adventitial-endothelial reaction, Oeller believed that the large basophilic lymphoid cells "assumed the shape of lymphocytes." "The lymphoid-plasma cellular reaction showed a specific tendency to differentiate into lymphocytes." As this occurred at the same time as the injected erythrocytes underwent hemolysis, and since the injection of dissolved hemoglobin caused no endothelial reaction but only the production of lymphocytes and plasma cells, he concluded that these cells possibly ingested and metabolized dissolved antigen in a fashion similar to that in which phagocytes handled corpuscular matter.

Siegmund[7] could not confirm Oeller's theory of endothelial reaction but explained it as confusion with phagocytosis of granulocytes by macrophages. However, he also described two different reactions, namely, (1) lymphoid-plasma cellular proliferations resembling Oeller's endothelial-adventitial reaction and (2) changes in the intima of blood vessels which he called "intima granulomas." In highly immunized animals he observed "organoid structures in the adventitial tissue" consisting of hemopoietic parenchyma developing into the direction of lymphatic-plasma cellular as well as myeloid elements." The basophilic cells in the septums of the lungs were interpreted as "hemocytoblasts arising from endothelial and adventitial elements." After injection of proteins Siegmund found a preponderance of lymphocytes; after injection of iron, myeloid-erythroplastic elements.

Siegmund's "intima granulomas" were found in animals that had received massive doses of living colon bacilli (Escherichia coli) intravenously. They were also found in human beings that had died from septicemia. As these were later identified as organized thrombi,[8] they should not be included among the reactions under discussion here.

The lymphoid-plasma cellular reactions of Oeller and Siegmund were soon confirmed, notably by Domagk[9] and Victor Schilling.[10] The latter also observed a decided reaction of the lymphatic apparatus in the spleen and elsewhere with the formation of large secondary nodules with many mitotic figures. However, the rapid transformation of endothelial or adventitial cells into polymorphonuclear leukocytes described by Oeller and Siegmund could not be substantiated; the appearance of granulocytes in the lungs was found to be caused entirely by emigration of these cells from the circulating blood (Schilling).

If in spite of these and other confirmations the general vascular reactions which follow the intravenous introduction of antigen were not generally recognized, this was probably due to the skeptical views of Aschoff and Roesle and their pupils, who held such prominent positions in Germany at that time. It has been pointed out elsewhere[11] that the failure by Seemann, Ewald, Gerlach and others to reproduce these reactions was due to inadequate experimentation (improper dosage of antigen, inadequate time intervals and unsuitable animals). In part, however, it was conditioned by the descriptions of Oeller and Siegmund which were not altogether clear; in fact, a good many of the doses and time intervals given by these authors indicate that in some of their animals the reaction described by them must have existed before the antigen was introduced. Nevertheless, to Oeller and Siegmund goes the credit for having been first to recognize these reactions; they were pioneers in the study of phenomena whose significance is fully realized only now.

The study of the general mesenchymal reactions after the intravenous introduction of antigens received new impetus only in 1929 and 1930, when Ehrich,[12] Epstein[13] and Nye and Parker[14] published their observations. It was shown[12] that the degree and character of the reactions depended much on the dosage of the antigen employed. Repeated intravenous injections of rabbits with 1 to 5 cc. of twenty hour whole broth cultures of Staphylococcus aureus that had been killed by heating for two hours at 60 C. caused only moderate reactions, while injections of the sediment of 40 to 60 cc. of cultures caused enormous reactions, particularly in lungs, liver and spleen. After small doses lymphocytes and plasma cells predominated; after large doses histiocytes and reticuloendothelial elements were the outstanding cells, and there were numerous giant cells of Langhans type. In the rabbits there also developed hyperplasia of the thymus, the lymph nodes and the malpighian bodies of the spleen. The hyperplasia of the thymus was preceded by a drop in weight of this organ even when small doses were given. The latter observation is of considerable interest in view of modern research on the so-called alarm reaction[15] and on globulin production. Research in progress (with Dr. Joseph Seifter) indicates that the weight of the thymus is one of the finest indicators of the alarm reaction, suggesting that even the small doses of Staphylococcus vaccine used in our study were not without toxic effect. As the reactions occurred immediately after the first injection of the antigen, it was concluded that they were not allergic in nature, as claimed by Oeller and Siegmund, but were primary reactions of the mesenchyma to the bacteria or their products. As the animals that received large doses manifested enormous reactions but showed much smaller agglutinin concentrations than those which received small doses and had minor reactions, it was felt that the reactions of the vascular connective tissue denoted damage rather than antibody production.

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[6] Oeller, H.: Experimentelle Studien zur pathologischen Physiologie des Mesenchyms und seiner Stoffwechselleistungen bei Infektionen, Krankheitsforschung **1**: 28, 1925.

[7] Siegmund, H.: Untersuchungen ueber Immunitaet und Entzuendung, Verhandl. d. deutsch. path. Gesellsch. **19**: 114, 1923; Ueber einige Reaktione der Gefässwaende und des Endocards bei experimenteller und menschlicher Allgemeininfektion, ibid. **20**: 260, 1925.

[8] Ewald, W.: Zur Morphologie der Immunitätsreaktionen mit besonderer Beruecksichtigung des Gefassendothels, Beitr. z. path. Anat. u. z. allg. Path. **83**: 681, 1930.

[9] Domagk, G.: Untersuchungen über die Bedeutung des retikuloendothelialen Systems für die Vernichtung von Infektionserregern und für die Entstehung des Amyloids, Virchows Arch. f. path. Anat. **253**: 594, 1924; Pathologisch-anatomische Beobachtungen bei der Anaphylaxie, Verhandl. d. deutsch. path. Gesellsch. **20**: 280, 1925.

[10] Schilling, V.: Das Knocchenmark als Organ: III. Funktion des Mark parenchyms und Leukozytose, Deutsche med. Wchnschr. **51**: 516, 1925.

[11] Ehrich, W. E., and Wohlrab, R.: I. Ueber die Reaktionen des Gefässbindegewebsapparates auf intravenoese Staphylokokkeninjektionen und ihre Bedeutung, Beitr. z. path. Anat. u. z. allg. Path. **93**: 321, 1934.

[12] Ehrich, W. E.: Experimental Studies of the Effect of the Intravenous Injection of Killed Staphylococci on the Behaviour of Lymphatic Tissue, Thymus, and the Vascular Connective Tissue, J. Exper. Med. **49**: 361, 1929.

[13] Epstein, E.: Beitrag zur Theorie und Morphologie der Immunitat, Virchows Arch. f. path. Anat. **273**: 89, 1929.

[14] Nye, R. N., and Parker, F.: Tissue Reactions in Rabbits Following Intravenous Injections of Bacteria, Am. J. Path. **6**: 38, 1930.

In publications with Wohlrab and Voigt[16] it was shown that after the intravenous injection of the centrifugate of 45 to 70 cc. per kilogram of body weight of killed broth culture of Staph. aureus, true plasma cells with eccentric nucleus and a light vacuole in the cytoplasm were comparatively rare in lungs and liver, though more frequent in the pulp of the spleen; the predominating cells were first small and large lymphocytes and possibly monoblasts and later histiocytes and reticuloendothelial cells. Of 28 rabbits receiving these doses once a week for four weeks, 22 showed agglutinin titers under 1 : 1,000, 2 revealed titers between 1 : 1,000 and 1 : 2,000 and 4 showed titers larger than 1 : 2,000. On the other hand, of 10 rabbits which received small doses six times every fortnight for six weeks, 5 showed titers between 1 : 5,000 and 1 : 7,000 and 5 larger than 1 : 10,000. From these facts it was concluded that the reactions observed were not immune reactions but were merely expressions of a pathologic defense reaction (excessive digestion) in contrast to good antibody production as a physiologic defense reaction, the former making its appearance only when the latter failed. In other words, it was considered that the reactions indicated damage, optimal antibody production being induced by doses of antigen that were smaller than those which caused these reactions.

Nye and Parker,[14] who injected rabbits intravenously with 1 to 5 cc. of living or 5 to 10 cc. of killed broth culture of nonhemolytic gamma type streptococci, found also first chiefly lymphocytic and later monocytic reactions especially in the lungs. Rabbits killed after twelve to sixteen injections showed definitely less response than did those killed after five or six injections. As the agglutinin titers remained low (1 : 1,280 and 1 : 2,560 in the two animals tested), skin tests remained negative and injections of nonantigenic materials such as india ink or "collargol" a preparation of colloidal silver and silver oxide stabilized by derived egg albumin, caused essentially the same though less pronounced lesions, it was concluded that they were not reactions of sensitization or immunization, but that they "represented the nonspecific reaction of the rabbit in the process of disposing of certain foreign materials injected into the blood stream."

While Nye and Parker, like us,[16] found no evidence for an immunizing function of the general vascular reactions, Epstein[13] came to a different conclusion. In studying the livers of rabbits given repeated intravenous injections of 0.5 cc. of pig serum, rabbit heart extract, sheep erythrocytes and so forth he observed the appearance in the sinusoids of "medium sized and large, frequently irregularly shaped cells with abundant very basophilic cytoplasm—showing small sickle-shaped or round droplet-like juxtanuclear vacuoles only in occasional cases." Epstein believed that these were derivates of the histiocytes of the liver; his illustrations, however, leave no doubt that these were the same lymphoid-plasma cellular elements described first by Oeller and Siegmund. As the Wassermann reaction, Meinicke reaction and precipitin and hemolysin determinations indicated good antibody response, Epstein concluded that the appearance of the histiocytes was a morphologic expression of antibody production.

It should be noted (1) that Epstein used much smaller doses than my associates and I or Nye and Parker, (2) that he did not find reactions in the lungs of his animals and (3) that his hepatic reactions were lymphoid-plasma cellular rather than monocytic-histiocytic. If we concluded that our reactions were not a morphologic expression of antibody production, we were speaking of the more severe monocytic-histiocytic reactions. Our conclusions, therefore, do not conflict with those of Epstein.

In subsequent years similar observations were reported, notably by Rich, Lewis and Wintrobe[17] and by Smith, Morgan and Mudd.[18] Rich, Lewis and Wintrobe, who studied the behavior of the spleen during immunization, concluded that the large mononuclear cells which proliferated in this organ and presumably were the sources of antibody were not histiocytes but resembled lymphoblasts in all observed respects. Although these cells were not necessarily lymphoblasts in the sense of being immature lymphoid cells, it was conceivable that they were lymphocytes which were greatly enlarged because they performed some special function. On the other hand Smith, Morgan and Mudd, in their study of the histiopathologic changes produced in rabbits inoculated with whole hemolytic streptococci and with certain of their component fractions, came to the conclusion that the parenchymatous degeneration as well as the endovascular and perivascular infiltrations with lymphocytes, plasma cells and histiocytes which developed in their animals were toxic manifestations characteristic of some streptococcic products.

The investigation of the general mesenchymal reactions took a new turn only in 1941 when Bjørneboe introduced quantitative measures into this study. In a first series of experiments[19] several groups of rabbits were injected intravenously with up to eight different types of pneumococci simultaneously, each rabbit receiving 500 million cocci of each type every other day for six months; one group of rabbits received 2.5 billion cocci of one type. It was found that of the animals that received three types of pneumococci all survived the six months of experimentation; of those that received four types the survival rate was 80 per cent, with five types 60 per cent, with six types 40 per cent and with eight types 20 per cent; of the animals that received only one type but five times the individual dose, none survived this period. The antibody response as measured according to Heidelberger and Kabat was enormous. It was observed that with three types of pneumococci antibody production per type occurred with the same rate and in the same quantity as with one antigen; with four or more types, however, there was a decrease in rate and quantity of antibody production per type, though the total volume of antibody was the highest in the animals that received eight types.

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[15] Selye, H.: The General Adaptation Syndrome and the Diseases of Adaptation, J. Clin. Endocrinol. **6**: 117, 1946.

[16] (a) Ehrich, W. E., and Voigt, W.: II. Ueber die Reaktionen des Gefässbindegewebsapparates auf intravenöse Staphylokokkeninjektionen und ihre Bedeutung, Beitr. z. path. Anat. u. z. allg. Path. **93**: 348, 1934. (b) Ehrich and Wohlrab.[11]

[17] Rich, A. R.; Lewis, M. R., and Wintrobe, M. M.: The Activity of the Lymphocyte in the Body's Reaction to Foreign Protein, as Established by the Identification of the Acute Splenic Tumor Cells, Bull. Johns Hopkins Hosp. **65**: 311, 1939.

[18] Smith, L. W.; Morgan, I. M., and Mudd, S.: Histopathologic Changes Produced in Rabbits by Experimental Inoculation with Hemolytic Streptococci and Certain of their Component Factors, Am. J. Path. **16**: 87, 1940.

[19] Bjørneboe, M.: Serumprotein und Antistoffprotein bei Immunisierung mit mehreren Antigenen, Ztschr. f. Immunitätsforsch. u. exper. Therap. **99**: 245, 1941.

In subsequent experiments Bjørneboe [20] injected first 2 cc. and thereafter 4 cc. of a polyvalent pneumococcus vaccine into the auricular veins of 40 rabbits weighing about 2,000 Gm. each. The vaccine contained 1 billion cocci per cubic centimeter of eight different types. The injections were given every other day for ninety-two days. Nine of these rabbits died during the course of immunization. Another group of 7 rabbits received intravenous injections of a polyvalent Salmonella vaccine containing about 1.4 billion bacteria per cubic centimeter. These rabbits were injected every other day for two months, commencing with 0.02 cc. and then doubling the dose at each injection until it amounted to 2 cc.; this dose was then maintained.

There was excellent antibody production in both series of experiments. In the pneumococcus series, for instance, antibody was found first during the second week of immunization, when the rabbits developed an average of 0.5 Gm. per hundred cubic centimeters of agglutinin globulin as measured by Heidelberger and Kabat's method. During the third week the amount rose to 2.0 Gm., and in the fourth week to 3.35 Gm., per hundred cubic centimeters, but thereafter it decreased again in spite of continued administration of the antigen.

In their studies of the morphologic changes in these animals, Bjørneboe and Gormsen [21] found that the weight of the spleen rose to six times normal (in some animals). The lungs were larger and of firmer consistency than those of the controls. Microscopically there was a moderate plasma cell proliferation in liver, spleen and elsewhere three to five days after the first injection. Most of the plasma cells showed a typical picture with eccentric "wheel nuclei" and a light halo in the cytoplasm. Yet many of the plasma cells, especially in the spleen, had a rather scanty cytoplasm and their nuclei were without the characteristic spoke arrangement; in fact, they corresponded to the cells which Rich, Lewis and Wintrobe [17] had designated as "acute splenic tumor cells." The plasma cellular reaction became more intense, particularly in the spleen, until about the thirteenth day; thereafter it was fairly constant until the thirty-first day, but then it became somewhat less massive. In the animals examined two to three and a half months after the last injection the reactions had completely disappeared.

In contrast to the observations of previous students [22] Bjørneboe and Gormsen at no time saw "any pronounced hyperplasia of the follicles or any distinct proliferation of reaction centers." As good correlation was found between the formation of the antibody on the one hand and the proliferation of plasma cells on the other, it was felt that the latter was the source of the former. It was concluded that either the plasma cells alone produced the antibody or the plasma cells represented functional stages of the antibody-producing cells.

It should be noted that Nye and Parker [14] like my associates and I [23] used considerably larger doses than Bjørneboe and Gormsen, whose doses were between those of Epstein [13] and of Nye and Parker,[14] though closer to the latter. Similarly, the cellular reactions observed by Bjørneboe and Gormsen resembled those of Epstein more closely than those of Nye and Parker or of my group, the cellular response being one of lymphoid cells rather than of macrophages. Our conclusions as to the nature of these reactions therefore conflict with those of Bjørneboe and Gormsen as little as they conflict with those of Epstein.

COMMENT

In summary of the various observations recorded in the literature, it may be regarded as established that the intravenous introduction of bacteria and other antigens, if in sufficient dose, produces general vascular reactions particularly in lungs, spleen and liver. Moderate reactions of this type were observed in rabbits which received repeated injections of 0.5 cc. of pig serum or 1.0 cc. of killed broth culture of Staph. aureus. With larger quantities of antigen the reactions became severer; the most massive reactions were observed with the largest doses of antigen injected (the sediment of up to 70 cc. per kilogram of body weight of killed broth culture of Staph. aureus in rabbits). With moderate doses lymphocytes and plasma cells were the predominating cells; with large doses monocytes and histiocytes prevailed. Because moderate doses that produced lymphocytic-plasma cellular reactions caused excellent antibody production, while with large quantities of antigen the antibody response was depressed, and because much evidence has recently been accumulated to show that antibody production is a function of the lymphocytes and plasma cells rather than of the macrophages, it appears that the appearance of lymphocytes and plasma cells in the intima and adventitia of the vessels during exposure to antigen can be regarded as indicating good antibody production. However, if the vascular response is a predominance of monocytes and histiocytes, it may indicate that the stimulus of the injected antigen has exceeded its optimum.

It is difficult to determine where the borderline between benefit and damage may be. From the experiments of Bjørneboe [19] it would appear that with pneumococci in rabbits this borderline was approached in those animals which every other day received three types of pneumococci, about 500 million of each type; with larger doses, there was less antibody production per type of organism and some animals died during the course of administration. However, the location of this borderline is by no means certain, because I observed an initial drop in the weight of the thymus in rabbits receiving 1 to 5 cc. of killed broth culture of Staph. aureus six times a week every other week.[12] This indicated the presence of an alarm reaction.

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[20] Bjørneboe, M.: Serum Proteins During Immunization, Acta. path. et microbiol. Scandinav. **20:** 221, 1943.

[21] Bjørneboe, M., and Gormsen, H.: Experimental Studies on the Role of Plasma Cells as Antibody Producers, Acta path. et microbiol. Scandinav. **20:** 649, 1943.

[22] Schilling.[10] Ehrich.[12] Nye and Parker.[14] Ehrich and Voigt.[16a] Rich, Lewis and Wintrobe.[17]

[23] Ehrich and Wohlrab.[11] Ehrich.[12] Ehrich and Voigt.[16a]

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, SEPTEMBER 13, 1947

A. M. A. MEDAL TO HONOR GENERAL PRACTITIONER

The creation of a midwinter session for the House of Delegates of the American Medical Association and with it a scientific meeting designed particularly for general practitioners was an action of profound significance to physicians and the public. During recent years the need for increased emphasis on the work of the general practitioner has become most apparent. The establishment of the certifying boards in the various specialties has been associated with a tendency to limit the development of general practitioners and also the activities carried on by such physicians in hospitals. To overcome this trend the American Medical Association created a Section on General Practice as a feature of its Annual Session. Now meetings devoted particularly to the needs of the general practitioner at the supplemental session extend still further the interest of the American Medical Association in the education and practice of these physicians.

During the last few years organizations have been established in the field of general practice which have apparently been designed to act as pressure groups to protect the interests of the general practitioner and to forward his work. Since the American Medical Association is the agency which includes the overwhelming majority of physicians in the United States, including a preponderance of general practitioners, the activities of the American Medical Association in this field are likely to have more potency than those of smaller or more localized bodies.

At the meeting of the Board of Trustees in Chicago September 4 and 5 the Board established a special gold medal for a general practitioner who has rendered exceptional service to his community. This award, similar to the American Medical Association's Distinguished Service Medal, which has been given annually since 1938 for scientific advancement in the field of medicine, will be conferred on a general practitioner for the first time at the supplemental session in Cleveland on Jan. 7, 1948. This medal is designed especially to honor a general practitioner who has served as a family physician and who has in that capacity received the recognition of his community. The award will be known as "the medal of the American Medical Association for exceptional service by a general practitioner;" it will include not only the medal but a certificate indicating the reasons for the award. Nominations for this award may be submitted to the headquarters office of the American Medical Association in Chicago by any state medical association or any community service club such as Rotary, Kiwanis or Lions Clubs, by Chambers of Commerce, women's clubs, community councils or similar groups. The nominations should include the name and address of the physician, his scholastic record and a record of his medical service to his community. The nominations may be addressed to the General Practitioner Award, American Medical Association, 535 North Dearborn Street, Chicago 10. When they are received, they will be submitted to the executive committee of the Section on General Practice of Medicine of the American Medical Association, which is composed of Drs. Wingate M. Johnson, Winston-Salem, N. C.; Paul A. Davis, Akron, Ohio, and E. A. Royston, Los Angeles. This committee will select five leading candidates, whose names will be submitted to the Board of Trustees. The Board in turn will nominate three of these to the House of Delegates. On the opening day's meeting at the supplemental session the House of Delegates will receive the nominations together with a record of each of the candidates and will choose by ballot the general practitioner who is to receive the medal.

By this award the American Medical Association will focus the interest of the medical profession and the people of the United States on the tremendous services given to them by general practitioners of medicine. The records of those who are nominated will indicate the range of the activities of such physicians.

THE NITROGEN MUSTARDS (β-CHLOROETHYL AMINES)

At the conclusion of World War I the theory was accepted that mustard gas exerts its vesicant action by releasing hydrochloric acid intracellularly. Studies undertaken at the beginning of World War II have revealed [1] a type of action of the sulfur and nitrogen mustards which is unlike that of any other chemical agent and which resembles in many ways that of x-rays. The principal systemic action of the nitrogen and sulfur mustards is that which causes the death of cells. The cellular susceptibility is related to proliferative activity; thus the formed elements of the blood and the mucosa of the gastrointestinal tract first reflect the cytotoxic action of the mustards. The action of the mustards on the blood forming organs as reflected in the peripheral blood of both experimental animals and man results in lymphopenia, granulocytopenia, thrombocytopenia and moderate anemia. Although diverse systemic effects can be elicited in the mammalian organism by the administration of toxic amounts of the mustards, threshold doses evoke pathologic changes only in cells and tissues which normally exhibit relatively high rates of proliferation and growth. The mitotic activity of a variety of cells from representative unicellular invertebrate, amphibian, mammalian and higher plant organisms is peculiarly sensitive to inhibition by minimally effective doses. Evidence of a direct toxic action on nuclear mechanisms is the appearance of extensive nuclear fragmentation in cells of the corneal epithelium which have been exposed to doses somewhat higher than those which affect only a mitotic inhibition.

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[1] Gilman, Alfred, and Philips, F. S.: The Biological Actions and Therapeutic Applications of the B-Chloroethyl Amines and Sulfides, Science **103:** 409 (April 5) 1946.

The effects of the mustards on lymphoid tissue, coupled with the finding that actively proliferating cells are selectively vulnerable to the cytotoxic action of the mustards, suggested the therapeutic use of these compounds in the treatment of neoplasms of lymphoid tissue. Of the many substances studied, two variants of special importance have emerged: *tris*(*β*-chloroethyl) amine hydrochloride and methyl-*bis*(*β*-chloroethyl) amine hydrochloride. These two nitrogen mustards are water soluble, crystalline compounds which can be readily dissolved in sterile saline solution for intravenous administration. Experiments on transplanted lymphosarcoma in mice revealed that dissolution of such tumors could be rapidly effected, although the dose required bordered on the toxic, and the tumor invariably returned. The first clinical trial of the nitrogen mustards was conducted by Gilman and his associates on a group of 6 patients in the terminal stages of various neoplastic diseases. The results were sufficiently encouraging to warrant further clinical experimentation.

Goodman and his associates[2] described the action of the halogenated alkyl amines (nitrogen mustards) in the treatment of lymphosarcoma, Hodgkin's disease, leukemia and a limited number of allied and miscellaneous disorders. In all, 67 patients have been studied. Encouraging results have been obtained in Hodgkin's disease, lymphosarcoma and chronic leukemia. In the first two disorders dramatic improvement has been observed. Some patients failed to benefit from *β*-chloroethyl amine therapy. Varied responses have been observed in acute and subacute leukemias. In a considerable portion of terminal and radiation resistant cases, especially of Hodgkin's disease and lymphosarcoma, the *β*-chloroethyl amines have produced clinical remissions lasting from weeks to months. Responsiveness to radiation therapy may occasionally be restored after a course of nitrogen mustard therapy. These authors maintain that the margin of safety in the use of these chemicals is narrow, necessitating the exercise of caution. The blood picture must be carefully followed as a guide to subsequent dosage. The more serious late toxic effects are those of leukopenia, granulocytopenia, thrombocytopenia and anemia. It is not known whether the *β*-chloroethyl amines represent the best compounds of their chemical group.

Jacobson and his co-workers[3] report the results of the use of methyl-*bis*(beta-chloroethyl)amine hydrochloride in the treatment of a series of 59 patients with neoplastic and allied diseases of the hemopoietic system. In their experience acute leukemia and multiple myeloma did not respond to treatment, and the encouraging results have been largely confined to Hodgkin's disease. The common symptoms of fever and malaise were frequently relieved within a short period after the initiation of treatment. Lymphadenopathy, splenomegaly and hepatomegaly usually regressed rapidly. Repeated courses of treatment with the drug have produced further remissions. In certain cases of Hodgkin's disease classified as x-ray resistant, significant clinical remissions have been produced.

ApThomas and Cullumbine[4] treated 21 patients with Hodgkin's disease in the advanced stage and 4 patients with other reticuloses. The most important toxic effect observed was leukopenia, most cases showing this within three to twenty days of treatment. The results when compared with those of radiotherapy showed that the improvement in general condition, the lymph nodes and other signs was produced more quickly with nitrogen mustard than with x-rays but was of shorter duration. Vomiting is more likely and more severe after nitrogen mustard than after radiotherapy. There is no skin or mucosal reaction with intravenous nitrogen mustards, but local thrombosis at the injection site has been noted in a few cases. Leukopenia is certain and sometimes severe after nitrogen mustard, whereas after radiotherapy it occurs only when extensive areas are treated and can be controlled by stopping treatment. They conclude that nitrogen mustards are useful in the palliative treatment of extensive Hodgkin's disease. The symptoms can still be relieved by nitrogen mustards in cases in which radiotherapy has been abandoned.

It appears that so far these newer substances, like irradiation, have failed to cure Hodgkin's disease. However, the beneficial action already noted is of great importance, for hundreds of variants await synthesis and evaluation and it is probable that a substance will be developed which will have a more selective action on the tissues with less toxic effect.

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[2] Goodman, L. S.; Wintrobe, M. M.; Dameshek, William; Goodman, M. J.; Gilman, Alfred, and McLennan, Margaret T.: Nitrogen Mustard Therapy, J. A. M. A. **132**: 126 (Sept. 21) 1946.

[3] Jacobson, L. O.; Spurr, C. L.; Barron, E. S. G.; Smith, Taylor; Lushbaugh, Clarence, and Dick, G. F.: Nitrogen Mustard Therapy, J. A. M. A. **132**: 263 (Oct. 5) 1946.

[4] ApThomas, M. I. R., and Cullumbine, Harry: Nitrogen Mustards in Hodgkin's Disease, Lancet **1**: 899 (June 28) 1947.

Current Comment

DR. WINGATE JOHNSON ELECTED TRUSTEE

At its session held in Chicago September 4, the Board of Trustees of the American Medical Association elected Dr. Wingate M. Johnson, professor of clinical medicine at Bowman Gray School of Medicine of Wake Forest College, Winston-Salem, N. C., a member of the Board of Trustees to fill the unexpired term of the late Dr. Charles W. Roberts, who died in Atlanta, Ga., July 28. Dr. Wingate M. Johnson is widely known to the medical profession in the United States as one of the leaders in the field of internal medicine. He has practiced in Winston-Salem almost continuously since his graduation from Jefferson Medical College in 1908. Dr. Johnson has been a president of the North Carolina State Medical Association and also of the American Geriatrics Society. He is editor of the North Carolina State Medical Journal and author of many monographs and articles. Of late he has devoted himself increasingly to raising the status of the general practitioner, and he has served as chairman of the Section on General Practice of the American Medical Association.

REACTIONS TO BACTERIAL ANTIGENS

Elsewhere in this issue (page 94) is a report of the Council on Pharmacy and Chemistry entitled "An Inquiry into the Significance of the Tissue Reactions Caused by Antigens," by Dr. William E. Ehrich. This interesting report describes reactions in the regional lymph nodes, the general vascular system and the vital organs which may follow injection of bacterial antigens. The beneficial physiologic responses of active immunization are shown to merge, with dosages above optimal, into reactions indicating toxicity. Currently recommended dosages of bacterial vaccines (typhoid-paratyphoid 3.75 billion bacilli per course, pertussis 70-100 billion bacteria per course) may be close to the borderline between optimal immunizing and toxic quantities as estimated from the experimental results presented by Ehrich and from clinical observations. The efficacy and desirability of proper immunization procedures are unquestionable and are borne out by extensive experiences within the armed services during the war. Optimal quantities can readily be exceeded, and the systemic response in vascular system and organs weigh against indiscriminate use of immunization procedures. Moreover, there are grounds for believing that even currently approved vaccines may be susceptible of improvement in terms of reduced toxicity with undiminished efficacy by more intelligent separation and use of the specific immunizing antigens required. This is a goal for joint laboratory and clinical research. Active immunization is desirable in instances in which there is a real risk of exposure to infection, in which there is proved efficacy of the specific agent used as immunizing antigen, and when dosage is adequately known. The notion that a vaccine of unknown efficacy "can't hurt the patient even if it doesn't help him" is hardly tenable. The use of shotgun "catarrhal vaccines"[1] may involve harm as well as needless expense. Still other consequences of vaccination with bacteria or their products deserve consideration; these are the manifestations of allergy elicited when the patient is hypersensitive to the specific bacterial or other antigens in question. The systemic inflammatory responses of allergy closely resemble those due to primary toxicity. The many complex aspects of bacterial hypersensitivity have been ably discussed by Rich,[2] but their discussion would be beyond the scope of Dr. Ehrich's report. However, allergic reactions to bacterial vaccines as well as reactions of primary toxicity are complications that demand the use of vaccines only with specific and rational indications and in optimal dosage.

COMMERCIALISM IN MEDICINE IN MEXICO

Among the situations which strike the North American visitor peculiarly in some Latin American countries is the exploitation of the medical profession by unprincipled commercial agencies with ideals incompatible with the ethical standards of medicine as practiced in the United States. For instance, in Mexico there is an agency called "Productos Omega" which sends to every physician in Mexico a pack of forms on the cover of which there appears an illustration of a marble deskstand with two fountain pens. The printing indicates that the value of this little adornment is $40. The doctor is told that he is going to get this outfit absolutely free. All he has to do is to write twenty prescriptions for the products manufactured by "Omega" and then return to the firm the stubs of the prescriptions which indicate the name of the product prescribed, the name of the pharmacist, the name of the disease and the number of the prescription. A reference to the products of this company reveals that they are the manufacturers of some of the most extraordinary shotgun prescriptions ever introduced in medical practice. One includes tuberculin mixed with "thiocol" (potassium guiacolsulfonate) and two other ingredients. Another, a mercury preparation, is offered for all gastrointestinal complaints, including typhoid, paratyphoid, colon infections, gastroenteritis and fevers. For the ladies there is a preparation called "contraseptol," said to be useful in irrigating all the cavities, which includes seven different ingredients; a uterine sedative contains hydrastis, viburnum, sarsaparilla and what not. Several unscientific preparations against malaria are included. North American medicine has fought a continuously gaining battle against this type of deterioration of medical science ever since the creation of the Council on Pharmacy and Chemistry of the American Medical Association in 1905. In the advancement of medicine in Latin American countries one of the first steps must be the elimination of the commercialism that saps the very vitals of medical science in those countries.

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[1] The Use of Vaccines for the Common Cold, J. A. M. A. **126**: 895 (Dec. 2) 1944.

[2] Rich, A. R.: The Significance of Hypersensitivity in Infections, Phys. Rev. **21**: 70 (Jan.) 1941.

ORGANIZATION SECTION

Washington Letter

(From a Special Correspondent)

Sept. 13, 1947.

Offer Use of Radioactive Isotopes to All Nations

Limited amounts of twenty radioactive tracer elements, out of the 90 odd isotopes produced in American atomic plants, have been offered by the United States to all nations to assist in the war on disease. President Truman announced in a telegram to the Fourth International Cancer Research Congress at St. Louis. Mr. Truman explained that the tracer elements had been made available for limited distribution to research workers in other countries. He termed the project an expression of "greater international cooperation in the field of medical and biologic research." The Atomic Energy Commission simultaneously announced that no atom bomb secrets would be endangered, stating that none of the tracers offered for sale are applicable to the development of atomic energy for industrial or military purposes. A condition of the offer is that all discoveries of foreign research workers through use of the isotopes would have to be reported freely to all nations

Study of Effect of Atom Bombing on Human Beings

The Atomic Energy Commission and the National Research Council will jointly continue long-range studies of the effect of atomic bombings on human survivors of the Nagasaki and Hiroshima attacks. A group has been assigned to this work as a result of a directive by President Truman, who authorized the council "to undertake a continuing study of the medical and biologic effects of the atomic bomb on man." Dr. Thomas M. Rivers of the Rockefeller Institute for Medical Research is chairman; the members are: Drs. George Beadle, California Institute of Technology; Detlev W. Bronk, National Research Council; Austin M. Brues, Argonne National Laboratory; George M. Lyon, chief, Radioisotope Research Section, Veterans Administration; Shields Warren, Harvard Medical School; Stafford L. Warren, University of California; George H. Whipple, University of Rochester, and Raymond E. Zirkle, University of Chicago. Dr. Lewis H. Weed, chairman of the National Research Council's division of medical sciences, said that major studies will be undertaken in genetics and heredity. Those taking part will be: Drs. H. J. Muller, Nobel prize winner, University of Indiana; L. H. Snyder, Ohio State University; James V. Neel, University of Michigan; C. H. Danforth, Stanford University, and D. R. Charles, University of Rochester.

MacArthur Reports Socialized Medicine Is Not Planned by U. S. for Japan

The War Department disclosed that General MacArthur had denied allegations by Representative Harness of Indiana, chairman of a House Expenditures subcommittee studying propaganda, that a government mission was going to Tokyo "committed in advance to a national program for socialized medicine in Japan." The general stated that "no socialization of medicine is at issue and nothing of propaganda is involved." He said that the Japanese government had asked for American advice on social security measures and the purpose of the United States was to give it.

Navy Launches Program to Reduce Venereal Disease

Coincident with reports from Italy that the U. S. Army is endeavoring to reduce its high venereal disease rate there, the U. S. Navy Potomac River Command announced a program to continue cutting down the disease rate here. The monthly rate per thousand in the District of Columbia is reported as being 34 in April, 34.67 in May, 38.28 in June and 34.93 in July. Reports from Leghorn, Italy, state that the July rate there was 240 cases per thousand men as compared with 350 per thousand in January.

Cancer Institute Announces Educational Drive

The National Cancer Institute has announced that it is about to launch a $1,250,000 program of cancer education in medical schools and other institutions. Grants will be made to institutions having cancer educational programs approved by the National Advisory Cancer Council. The purpose is to improve and integrate cancer instruction in medical schools. Grants will range from $10,000 to $25,000 and later will be made to dental schools on a lesser scale. Surgeon General Thomas Parran claims that medical students have received too little instruction in the field of cancer.

Coming Medical Meetings

Conference of State Medical Society Secretaries and Editors, Chicago, A.M.A. Headquarters, Nov. 7-8. Dr. George F. Lull, 535 N. Dearborn St., Chicago 10, Secretary.

American Academy of Neurological Surgery, Colorado Springs, Broadmoor Hotel, Oct. 9-11. Dr. T. C. Erickson, 1300 University Ave., Madison 5, Wis., Secretary.

American Academy of Ophthalmology and Otolaryngology, Chicago, Palmer House, Oct. 12-17. Dr. W. L. Benedict, 102 Second Ave. S.W., Rochester, Minn., Secretary.

American Anti-Arthritis Association, Del Mar, Calif., Oct. 4-5. Dr. Robert T. Pottenger, 65 N. Madison Ave., Pasadena, Calif., Secretary.

American Clinical and Climatological Association, Colorado Springs, Oct. 13-15. Dr. James Bordley III, Johns Hopkins Hospital, Baltimore 5, Secretary.

American Hospital Association, St. Louis, Sept. 22-25. Mr. George P. Bugbee, 18 E. Division St., Chicago, Exec. Secretary.

American Public Health Association, Atlantic City, Oct. 6-10. Dr. Reginald M. Atwater, 1790 Broadway, New York 19, Executive Secretary.

American Roentgen Ray Society, Atlantic City, Sept. 16-19. Dr. H. Dabney Kerr, University Hospitals, Iowa City, Secretary.

American Society for the Study of Arteriosclerosis, Chicago, Hotel Knickerbocker, Nov. 2-3. Dr. O. J. Pollak, Wilmington General Hospital, Wilmington 14, Delaware, Secretary.

American Society of Clinical Pathologists, Chicago, Drake Hotel, Oct. 28-30. Dr. A. S. Giordano, 531 N. Main St., South Bend, Ind., Secretary.

[illegible] Medical Colleges, Sun Valley, Idaho, Oct. 27- [illegible] 5 S. Wabash Ave., Chicago, Secretary.

[illegible] Association, Galveston, Texas, Oct. 17-18. Dr. William C. Menninger, 3617 W. Sixth Ave., Topeka, Kans., Secretary.

Colorado State Medical Society, Denver, Shirley-Savoy Hotel, Sept. 17-20. Mr. Harvey T. Sethman, 1612 Tremont Place, Denver 2, Executive Secretary.

Connecticut Clinical Congress, New Haven, Sept. 16-18. Dr. Francis G. Blake, 258 Church St., New Haven, Chairman.

Delaware, Medical Society of, Wilmington, Oct. 13-15. Dr. John F. Hynes, Memorial Hospital, Wilmington, Secretary.

District of Columbia, Medical Society of the, Washington, Hotel Statler, Oct. 6-8. Mr. Theodore Wiprud, 1718 M Street N.W., Washington 6, Secretary.

Indiana State Medical Association, French Lick, Oct. 28-30. Mr. Ray E. Smith, 23 E. Ohio St., Indianapolis 4, Executive Secretary.

International College of Surgeons, U. S. Chapter, Chicago, Palmer House, Sept. 29-Oct. 2. Dr. Louis J. Gariepy, 16401 Grand River Ave., Detroit 27, Secretary.

Inter-State Postgraduate Medical Association of North America, St. Louis, Public Auditorium, Oct. 14-17. Dr. Tom B. Throckmorton, 406 Sixth Ave., Des Moines, Iowa, Secretary.

Kansas City Southwest Clinical Society, Kansas City, Mo., Municipal Auditorium, Oct. 6-9. Mr. E. Leas Clower, 630 Shukert Bldg., Kansas City 6, Executive Secretary.

Kentucky State Medical Association, Louisville, Sept. 29-Oct. 2. Dr. P. E. Blackerby, 620 S. Third St., Louisville 2, Secretary.

Michigan State Medical Society, Grand Rapids, Pantlind Hotel, Sept. 23-26. Dr. L. Fernald Foster, 2020 Olds Tower, Lansing 8, Secretary.

Mississippi Valley Medical Society, Burlington, Iowa, Oct. 1-3. Dr. Harold Swanberg, 510 Maine St., Quincy, Ill., Secretary.

New England Postgraduate Assembly, Boston, Copley-Plaza Hotel, Oct. 29-31. Dr. Leroy E. Parkins, 8 Fenway, Boston 15, Chairman.

New York State Association of Public Health Laboratories, Albany, Nov. 7. Miss M. B. Kirkbride, New Scotland Ave., Albany 1, Secretary.

Pennsylvania, Medical Society of the State of, Pittsburgh, Hotel William Penn, Sept. 15-18. Dr. Walter F. Donaldson, 500 Penn Avenue, Pittsburgh 22, Secretary.

Southern Psychiatric Association, Birmingham, Ala., Oct. 13-14. Dr. Newdigate M. Owensby, 384 Peachtree St. N.E., Atlanta, Ga., Secretary.

Southwestern Medical Association, Phoenix, Ariz., Hotel Westward Ho, Nov. 6-8. Dr. Louis W. Breck, 116 Mills St., El Paso, Texas, Secretary.

Vermont State Medical Society, Burlington, Hotel Vermont, Oct. 1-3. Dr. Theodore H. Harwood, 128 Merchants Row, Rutland, Secretary.

Virginia, Medical Society of, Roanoke, Oct. 13-15. Miss Agnes V. Edwards, 1200 E. Clay St., Richmond 19, Secretary.

Washington State Medical Association, Seattle, Olympic Hotel, Sept. 28-Oct. 1. Dr. Harold E. Nichols, 327 Cobb Building, Seattle, Secretary.

Wisconsin, State Medical Society of, Milwaukee, Hotel Schroeder, Oct. 6-8. Mr. Charles H. Crownhart, 110 E. Main St., Madison 3, Secretary.

World Medical Association, Paris, France, Sept. 17-20. Dr. Charles Hill, B. M. A. House, Tavistock Sq., London, W. C. 1, England, and Dr. P. Cibrie, 60 boulevard de Latour-Maubourg, Paris 7e, France, Joint Secretaries.

GOVERNMENT SERVICES

ARMY

MEDICAL CORPS RESERVE OFFICERS' TRAINING CORPS (ROTC)

The Surgeon General has announced that Medical Corps ROTC units will be in operation at forty-three approved medical schools during the 1947-1948 academic year. This is more than double the number that were in operation during the 1946-1947 academic year. The Surgeon General plans to arrange with the remaining approved medical schools during the next year for the establishment of units in the fall of 1948. It is hoped that the goal of a unit in every approved medical school will be realized by the beginning of the 1948-1949 academic year.

The program is a procurement objective for the Reserve and Regular Army components of the Medical Department. Several hundred graduates are required on a yearly basis to build up an effective organized reserve corps in the interest of the national security program.

The program of instruction consists of two courses: an elementary course given during the freshman and sophomore academic years and an advanced course given during the junior and senior years at a rate of one hour of instruction per week throughout the four academic years. In addition, the student must agree to complete a six week summer training period in any summer following the sophomore academic year.

The instruction is designed to give the student progressive knowledge of the Army in general and the Medical Department in detail, together with the essentials of the complex problems of military preventive medicine. On satisfactory completion of the program, the young Reserve first lieutenant should, on mobilization day, be capable of taking care of himself in the Army and performing the functions of a general duty medical officer. Should he if on active duty be assigned to a troop unit, he must be given further training.

Medical Corps officers of the Regular Army are detailed to the schools as professors of military science and tactics of the ROTC units. The War Department General Staff has approved a policy of the Surgeon General to allow these PMS&Ts to participate in the graduate professional specialty training at the schools concerned.

The postwar Regular Army requires several hundred specialists certified by the various American specialty boards. Of this number, the Army graduate professional program of the Medical Department will produce about 50 per cent during the next few years. Therefore the Medical Department must take advantage of approved civilian facilities to augment requirements. Accordingly, the forty-three schools have made training available in a residency, a fellowship or on a postgraduate course basis. It is hoped to place this arrangement on a permanent basis.

The forty-three schools with the specialties indicated are as follows:

University of Arkansas School of Medicine	Obstetrics & gynecology
Baylor University College of Medicine	Internal medicine
University of Buffalo School of Medicine	Internal medicine
University of California Medical School	Psychiatry
University of Chicago School of Medicine	Psychiatry
University of Cincinnati College of Medicine	Psychiatry
University of Colorado School of Medicine	Psychiatry
Cornell University Medical College	Internal medicine
Duke University School of Medicine	Dermatology
Georgetown University School of Medicine	Internal medicine
University of Georgia School of Medicine	Radiology
George Washington University School of Medicine	Pathology
University of Illinois College of Medicine	Allergy
Indiana University School of Medicine	Cardiology
State University of Iowa College of Medicine	Thoracic surgery
Jefferson Medical College of Philadelphia	Internal medicine
Johns Hopkins University School of Medicine	Public health
University of Louisville School of Medicine	General surgery
Loyola University School of Medicine	Internal medicine
Medical College of Virginia	Internal medicine
University of Michigan Medical School	Obstetrics & gynecology
University of Minnesota Medical School	Anesthesiology
University of Nebraska College of Medicine	Orthopedic surgery
New York Medical College	Internal medicine
Ohio State University College of Medicine	General surgery
University of Oklahoma School of Medicine	Orthopedic surgery
University of Oregon Medical School	Internal medicine
University of Pennsylvania School of Medicine	Dermatology
University of Pittsburgh School of Medicine	Ophthalmology
St. Louis University School of Medicine	Orthopedic surgery
Syracuse University College of Medicine	Internal medicine
Temple University School of Medicine	Ophthalmology
University of Texas School of Medicine	Anesthesiology
Tufts College Medical School	Pathology
Vanderbilt University School of Medicine	Internal medicine
University of Vermont College of Medicine	Pathology
University of Virginia Department of Medicine	Otolaryngology
Washington University School of Medicine	Otolaryngology
Wayne University College of Medicine	Basic sciences
sity School of Medicine	Pediatrics
Medical School	Internal medicine
of Medicine	General surgery
New York University College of Medicine	Basic sciences

THREE DAY MEDICAL ROTC CONFERENCE

Medical Corps officers who will serve as professors of military science and tactics in the Reserve Officers' Training Corps program in forty-three approved medical colleges during the coming school year attended a three day orientation conference August 27-29 in the Office of the Surgeon General. Medical students in leading educational institutions of the country will receive intensive training in military medicine through the tutelage of these Medical Corps officers, who will hold the rank of either major, lieutenant colonel or colonel.

Participating in the three day orientation conferences were representatives of the Surgeon General's Office, Army Ground Forces, G-3 or Organization and Training Division of the General Staff and the surgeons of the six Army areas.

ROTC training will be compulsory for freshmen and sophomore students in about one third of the forty-three medical colleges, mainly land grant institutions. In the others it will be voluntary. The medical officers who give the instruction to the medical students will also receive training themselves through residencies, fellowships and postgraduate work in the special fields of medicine and surgery at the respective institutions to which they are assigned.

VENEREAL DISEASE RATE LOWEST SINCE VJ DAY

The War Department has announced that the Army's venereal disease rate both at home and abroad has reached a postwar low. The venereal disease incidence rate in Europe is 23 per cent below the July 1946 high, is 50 per cent below the high rate in the Pacific in October 1946 and is 47 per cent below the April 1946 peak in the United States. Since the stringent regulations outlined by the Secretary of War last January, a sharp drop has occurred in venereal disease, and the War Department Venereal Disease Control Council, comprised of ranking members of the general and special staffs, has met periodically to survey the situation and to develop further measures for venereal disease control.

MEDICAL DEPARTMENT PERSONNEL TO SHARE IN WALTER REED MEMORIAL

Members of the Medical Department of the Army will have the opportunity to share in the honor of placing a bust of the late Major Walter Reed in the New York University Hall of Fame, the Surgeon General has announced. Although a few individual doctors requested the privilege of contributing the funds for this purpose, estimated at about $6,000, all members of the Medical Department will be given an opportunity to contribute to this fund if they desire.

Ceremonies observing the occasion will be held during the fourth International Congresses of Tropical Medicine and Malaria in Washington, D. C., May 10-18, 1948, at which time the British also will pay honor to their great malariologist Sir Ronald Ross.

NAVY

NAVAL MEDICAL RESEARCH INSTITUTE IN CAIRO

Commander Robert A. Phillips (MC), U.S.N., has been assigned to command the U. S. Naval Medical Research Unit in Cairo, Egypt. Commander Phillips went to Cairo in 1945 with the United States Typhus Commission and later to Dachau, Germany. He formerly did "faculty service" at Yale, Stanford, Harvard and Cornell universities. His first naval assignment was in 1940 at Pensacola, Fla.; later he served with the naval medical unit at Rockefeller Institute, New York.

Three American authorities on mosquito eradication left Cairo recently for the Kharga and Dekhla oases to study technical problems of malarial control in those areas. They are Dr. John M. Weir of the Rockefeller Foundation, D. C. C. Deonier of the U. S. Department of Agriculture, now on loan to the Naval Research Unit in Egypt, and Ensign C. E. Connell, who is attached to the Naval Research Unit. Egyptian health officials accompanied this group to the oases.

ANNAPOLIS HOSPITAL RECEIVES AWARD FOR SAFETY

The U. S. Naval Hospital at Annapolis, Md., on August 27 was given the Secretary of the Navy's Award for Achievement in Safety for the years 1945-1946. The award read as follows: The Secretary of the Navy's Award for Achievement in Safety is given to the Naval Hospital, Annapolis, Md., for a frequency rate of 0.00 for the years 1945 and 1946. This perfect record for two consecutive years indicates constant vigilance, enthusiastic and wholehearted cooperation, and untiring effort among all personnel. The Naval Hospital is highly commended for the establishment and maintenance of an adequate and workable safety program, which is necessary in order to maintain this low frequency rate. The Secretary's Award for Achievement in Safety is presented in grateful acknowledgment for the saving of human life, the reduction in government expenditures and the increased production which this low frequency rate signifies.

PHYSICIANS PILOT SURGEON GENERAL ON INSPECTION TRIP

Rear Admiral Clifford A. Swanson, Surgeon General of the Navy, on August 20 flew to Norfolk, Va., to inspect the Hospital Corps School at Portsmouth. The pilot and the copilot Commander N. L. Barr (MC) and Capt. B. Groesbeck Jr. are both navy doctors. Others in the plane were Rear Admiral A. W. Chandler (DC), assistant chief, Bureau of Medicine and Surgery for Dentistry; Capt. B. W. Hogan (MC), executive officer, U. S. Naval Hospital, Bethesda, Md., and Lieut. Commander A. H. Nelson (HC), administrative assistant to the Surgeon General. Following inspection of the school the Surgeon General addressed all the medical personnel at the Portsmouth Naval Hospital.

PERSONAL

Captain Harold J. Bowen (MC), U.S.N., has been assigned as chief of surgery at the Charleston naval hospital, Charleston, S. C. Following his recent war service in the Pacific area Captain Bowen did postgraduate work at Mayo Clinic, Rochester, Minn.

PUBLIC HEALTH SERVICE

PHARMACY SECTION ESTABLISHED

A new pharmacy section has been established in the Hospital Division of the U. S. Public Health Service for the further development of pharmaceutical activities in the Marine Hospitals and their adjunct medical relief stations. The new pharmacy service will be under the direction of George F. Archambault, graduate and former faculty member of the Massachusetts College of Pharmacy, who for a year was director of professional relations in the New England states for the Liggett Drug Company and during the war was chief pharmacist at the Boston Marine Hospital.

The Hospital Division of the Public Health Service has the responsibility of providing medical, dental and hospital services for American merchant seamen, members of the Coast Guard and their dependents, the Coast and Geodetic Survey, foreign merchant seamen and others designated by law. It provides this service primarily through its system of twenty-four Marine Hospitals and 115 medical relief stations located throughout the United States and its possessions.

A further important development in connection with this program is a plan for commissioning a limited number of pharmacy-college graduates every year in the Public Health Service Commissioned Reserve Corps, selecting such men as have demonstrated special interests and abilities for careers in the public health field. Already an active recruiting campaign for pharmacists to be placed on commissioned status has been conducted by the Public Health Service, the first such recruitment for pharmacists since 1930. From the resulting list the first appointments are to be made of pharmacists to serve as commissioned officers in the regular corps of the Public Health Service.

FIRST FEDERAL GRANTS FOR RESEARCH IN MENTAL HEALTH

The Surgeon General of the U. S. Public Health Service has announced the award of the first federal grants for research in mental health under the new National Mental Health Act. Under this authorization the mental health program received its first appropriation totaling $7,500,000 on July 8, which will be used to finance, in addition to paying the cost of mental health activities within the Public Health Service, a threefold program of research and development of local mental health facilities and the training of mental health personnel. The award of the first federal grants announced for this purpose will go to institutions and individuals. The grants awarded were recommended by the National Mental Health Advisory Council, which is composed of experts in the field of mental health.

MISCELLANEOUS

SALE OF SURPLUS GOVERNMENT PROPERTY

The War Assets Administration has announced the following sales of surplus government property:

The Regional Office, 30 Van Ness Avenue, San Francisco 2, is having a sale of drugs and of hospital and laboratory supplies. The closing date for bids is September 19. Awards in this sale will be made to the highest bidder without regard to the priority status. Among the items for sale are hospital beds, bedside tables, sterilizers, medicine cabinets, splints and rubber gloves.

A fixed price sale of medical, dental and x-ray equipment is being conducted. Orders must be received at the W. A. A. Customer Service Center, Bldg. T-2, ORD, East Bessemer Avenue and South 9th Street, Greensboro, N. C., before 5 p. m., September 16. This sale is for World War II veterans only and includes such items as x-ray field equipment, cassettes, film holders, dental chairs, lathes and engines, cystoscopes and dental aspirating units.

Medical News

(Physicians will confer a favor by sending for this department items of news of general interest: such as relate to society activities, new hospitals, education and public health. Programs should be received at least two weeks before the date of meeting.)

CALIFORNIA

Refresher Courses for Physicians.—The University of California School of Medicine will present medical refresher courses for graduates of approved medical schools on the Los Angeles campus during the fall and winter months. Courses will be available in mid-September in dermatology, gynecology, medicine, general surgery, cardiology and pediatrics. Visiting lecturers scheduled to come to the Los Angeles campus include Drs. S. Charles J. Imperatori, New York; Erik Ask-Upmark, University of Upsala, Sweden; Ignacio Chavez of Mexico, D. F.; Tinsley R. Harrison, Dallas, Texas; Isadore Snapper, New York; Paul White, Boston; Frank E. Adair, New York; J. Dewey Bisgard, Omaha; Frederick A. Coller, Ann Arbor, Mich., and Ferdinand R. Schemm, Great Falls, Mont.

Dr. Stafford Warren to Head Radiation Laboratory.—The Medical School on the Los Angeles campus of the University of California will begin operating an atomic radiation medical laboratory about October 15. Research to discover means of treating radiologic injury to human beings will be the fundamental function of the new laboratory, which the university will maintain and staff under contract with the U. S. Atomic Energy Commission. The starting point for laboratory studies will be medical data collected after the bombing of Hiroshima and Nagasaki and the Bikini A-bomb tests. The laboratory will be under the direction of Dr. Stafford L. Warren, whose close connection with the A-bomb development began with his appointment as medical director of the Manhattan project in 1943. He was in charge of the first radiologic survey parties that entered the devastated Japanese cities. Between 30 and 40 persons will be involved in the laboratory project in its initial stages. Dr. Warren was appointed dean and professor of biophysics at the Los Angeles campus of the University of California early this year (The Journal, Feb. 8, p. 412). He was formerly on the faculty of the University of Rochester School of Medicine and Dentistry, Rochester, N. Y., as an associate professor of medicine in charge of radiology from 1925-1940, when he was made professor of radiology.

DISTRICT OF COLUMBIA

Impostor Repeats.—A promise to cure cancer of the breast for $1,200 is reported to have brought "Prof." Bernard Rubin, 68, of the 1600 block, Columbia Road N.W., a $100 fine and ninety days in jail when he was found guilty of practicing medicine without a license July 30 in Municipal Court in Washington, according to the Washington *Times-Herald.* Last March Rubin was fined $75 and sent to jail for sixty days for illegally practicing medicine, and in 1931 he was put on probation for petty larceny.

Georgetown University Hospital Opens.—Georgetown University's new $3,600,000 hospital opened early last month. Present at the ceremonies were the Very Rev. Lawrence C. Gorman, S. J., president of Georgetown University; the Rev. Paul A. McNally, S. J., dean of the university's medical school, and Sister Mary Antonella of the Sisters of Charity of Nazareth, superior and administrator of the new hospital. Formal dedication will not take place until this fall. The new hospital contains 407 beds and 123 bassinets, thirteen operating rooms, six delivery and labor rooms and a nursery. Its construction took thirty-one months. The hospital has been placed under the direction of the Sisters of Charity of Nazareth. The old Georgetown hospital will be used as a dormitory for Georgetown University.

ILLINOIS

State Toxicologic Analytic Service.—Establishment of a toxicologic analytic service at the University of Illinois College of Medicine, Chicago, for law enforcing agencies of the state has been announced by Dr. Carl C. Pfeiffer, head of the department of pharmacology and toxicology (The Journal, August 9, p. 1251). Dr. Pfeiffer said that the university laboratory would perform toxicologic analyses of the organs of any person whose death was unexpected. The service will be extended to all state's attorneys and coroners in the fifty-two counties of Illinois. The service has been developed as a result of numerous requests received by the University of Illinois from law enforcing agencies. State's attorneys and coroners have pointed out that facilities for accurate diagnosis of death due to poisoning are inadequate at present. Services to be performed by the university include the determination of blood alcohol, barbiturates, heavy metals, blood carbon monoxide and alkaloid tests and a complete analysis in the event that the cause of death is unknown. A nominal fee will be charged. A member of the professional staff of the department of pharmacology and toxicology will appear as an expert witness when needed. The service will be similar to a state plan already used in Michigan, Indiana and Wisconsin.

Chicago

First Cancer Research Fellowship.—Through the University of Chicago Cancer Research Foundation the university has established its first cancer research fellowship. Walter Schwimmer, Chicago advertising executive, has given the foundation $2,500 for the Daisy Schwimmer Fellowship in honor of his late wife. The research fund will be renewed for five years at $2,500 annually.

Improve Sanitation in Eating Places.—Since the city council in January authorized the board of health to hire three additional supervisors and twenty-eight additional inspectors, eighty-seven Chicago restaurants closed voluntarily while needed sanitary corrections were made. Over 6,000 food handlers have taken the four hour course in food handling and hygiene offered by the board of health. A new city ordinance, which became effective August 1, lays down more stringent rules for food dispensing establishments than were provided previously.

LOUISIANA

Narcotic Violation.—The Bureau of Narcotics, Washington, D. C., advises that Dr. Henry R. Officer, Sugartown, pleaded guilty in the U. S. District Court at Alexandria, July 24, to violation of the internal revenue code and was fined $5,000. Dr. Otto L. Freeman, Basile, who pleaded guilty in the same court July 21 to violation of the internal revenue code, was placed on probation for a period of five years. The court also fined him $2,500.

American Academy of General Practice.—A branch of the American Academy of General Practice was organized in Alexandria July 13. The aims and objective of the academy are to fulfil among general practitioners the same functions as are performed for physicians and surgeons by the American Academy of Physicians and Surgeons, to revise the standards of general practice and to bring greater recognition of the general practitioner. The following officers were elected: Drs. Jason P. Sanders, Shreveport, president; Guy R. Jones, Lockport, president-elect; Dorman B. Barber, Alexandria, vice president; Harry P. Forsyth, Alexandria, secretary, and Johnnie W. Atkinson, Gretna, treasurer.

MASSACHUSETTS

Graduate Course in Pediatrics.—Harvard Medical School, Boston, will hold a two week course, six hours daily, in diagnosis, therapy and prevention of diseases of infants, children and adolescents at the Massachusetts General Hospital, Boston, October 13-24. The course will cover growth and development, nutrition, endocrinology, metabolic and infectious diseases, allergy, cardiology, surgery, neurology and psychiatry. For information, address Course for Graduates, Harvard Medical School, Boston.

Medicolegal Conference.—The departments of legal medicine of the medical schools of Harvard, Tufts and Boston University and the Massachusetts Medico-Legal Society will present a six day program of lectures, conferences and demonstrations concerning the investigation of deaths in the interest of public safety October 13-18, at Harvard. Attendance will be limited to 25 persons who have registered in advance. Information may be obtained from the Department of Legal Medicine, 25 Shattuck Street, Boston.

MISSOURI

Dr. Post Awarded Howe Medal.—Dr. Lawrence T. Post, head of the ophthalmology department, Washington University School of Medicine, St. Louis, was recently awarded the Lucien Howe medal of the American Ophthalmological Society at its annual meeting at Hot Springs, Va. The award was in recognition of Dr. Post's work in teaching and for leadership in the study of eye diseases. Dr. Post, a graduate of Johns Hopkins University, 1913, is a member of the National Research Council's Subcommittee on Ophthalmology and serves on the staffs of a number of St. Louis hospitals.

NEW YORK

Dr. Roberts Retires.—Dr. Bertrand E. Roberts, Poughkeepsie, after twenty-five years' service in the New York State Department of Health, retired July 23. He has been associated with the department since 1922, first as epidemiologist and for the past seventeen years as district state health officer in charge of the Poughkeepsie area. He was health officer and city bacteriologist of Oskaloosa, Iowa, in 1916.

Four Hundred Fifty Year Practitioners. — Over 400 New York physicians who have practiced medicine for fifty years or more have been given commemorative certificates by the Medical Society of the State of New York. Dr. Nathan B. Van Etten, 300 East Tremont Avenue, Bronx 57, New York, has been named chairman of the organization committee for the suggested Fifty Year Club of New York State.

New York City

Dr. Friedman Retires.—Dr. Emanuel D. Friedman, chairman of the department of neurology, New York University College of Medicine, retired September 1 after thirty-seven years' service at the college and will become professor emeritus. A graduate of New York University College of Medicine, 1907, he has taught continuously since 1913 He became successively instructor in neuropathology in 1919, lecturer in neuropathology in 1922, clinical professor of neurology in 1924 and professor of neurology and head of the department in 1927. Of his various hospital staff appointments in New York and New Jersey, he will retain that of neuropsychiatrist to the psychiatric division at Bellevue Hospital.

Dr. Peterson to Go to China for WHO.—Dr. Jerome S. Peterson, district health officer of the New York City Department of Health, returned to China September 1 to serve a year as epidemiologist for the World Health Organization. He has been granted leave of absence. His work will be mainly concerned with the study and control of cholera, bubonic and pneumonic plague and kala-azar. A graduate of Columbia University College of Physicians and Surgeons, New York, 1931, Dr. Peterson joined the New York Health Department in 1937 and has been a health officer since 1942 For ten months last year he served with the United Nations Relief and Rehabilitation Administration as chief medical officer in China, where he had previously studied cholera.

OHIO

Society News.—The new officers for the Ohio State Radiological Society for 1948 are Dr. Ralph W. Holmes, Chillicothe, president; Henry Snow, Dayton, vice president, and Carroll C. Dundon, Cleveland, secretary-treasurer. The society will meet in conjunction with the Ohio State Medical Association in Cincinnati in May 1948.

Dr. Jordan Joins Cleveland Clinic Staff.—The Cleveland Clinic is expanding its educational activities, with particular emphasis on postgraduate medical training. The increased number of graduate fellowships offered by the clinic since the end of the war in connection with the G. I. Bill requires an augmented educational program of fellowship training. Also the Bunts lecture courses for practicing physicians will be given added importance. In connection with this program the Cleveland Clinic Foundation has added Dr. Edwin P. Jordan, Chicago, to its staff. Dr. Jordan will be director of medical education and the Bunts Educational Institute—the latter a newly created position which will correlate all of the educational activities of the Cleveland Clinic. This will include also the editorial, library, photographic and art departments of the clinic.

OKLAHOMA

Postgraduate Circuit Begins September 22.—The Postgraduate Committee of the Oklahoma State Medical Association has announced that teaching circuit number four, covering Kay, Noble, Pawnee, Osage, Payne, Lincoln, Creek and Tulsa counties, will open September 22. The committee has reported that the incidence of attendance at meetings in the first three circuits has averaged 87 per cent of those enrolled. Teaching centers in the fourth circuit will be Ponca City, Pawhuska, Stillwater-Cushing, Bristow-Sapulpa and Tulsa. The course of instruction will be in gynecology and will extend over a period of ten weeks.

Personals.—Dr. McLain Rogers, Clinton, was appointed acting superintendent of the Western Oklahoma Tuberculosis Sanatorium at Clinton, effective June 23. Dr. Rogers is a graduate of Atlanta (Ga.) College of Physicians and Surgeons, 1902, and is a member of the American College of Surgeons.——At the recent Rotary Convention in San Francisco Dr. Ralph C. Meloy, Claremore, was elected governor of the 136th District of Rotary International and as such will visit the fifty-nine Rotary clubs of Arkansas, Kansas, Missouri and Oklahoma during the next twelve months. Dr. Meloy is a past president of the Rogers County Medical Society.

TEXAS

Convalescent Home for Cancer Patients.—The M. D. Anderson Hospital for Cancer Research, Houston, September 1 opened a new annex, which will house 30 ambulatory cancer patients. The two story brick building was purchased and remodeled as a gift to the Texas Medical Center, Inc., by Mr. and Mrs. Lamar Fleming Jr., Houston, at a cost of about $45,000. Other gifts from individuals and clubs total $5,000. Two types of ambulatory patients will be housed in the annex: out of town cancer sufferers during periods of examination and diagnosis and patients released from the hospital but needing postoperative care or treatment. Free patients and part pay patients will be accepted. The hospital is operated by the University of Texas.

Dallas Cerebral Palsy Center.—A Dallas treatment center for cerebral palsied children established recently by the Dallas Society for Crippled Children, and approved by the Dallas County Medical Society, is in operation to treat cerebral palsied children, educate the public, demonstrate to the medical profession the benefit of early diagnosis and treatment and carry on research. An advisory board from the medical society helped to set up standards of treatment on an outpatient basis, and the Dallas Junior League supplies financial aid and volunteer workers to assist with clerical details and the care of the children. Similar projects throughout the state with the cooperation of the medical profession will be sponsored by the Texas Society for Crippled Children.

UTAH

State Medical Meeting September 11-13.—The fifty-second meeting of the Utah State Medical Association is being held at the Union Building, University of Utah, Salt Lake City, September 11-13, under the presidency of Dr. Lester A. Stevenson, Salt Lake City. On this centennial year of the settlement of the Salt Lake Valley the program committee has invited a number of natives of Utah in prominent places in the medical world to take part in the annual meeting. They include John L. Emmett, urologist, Rochester, Minn.; A. Ray Irvine, ophthalmologist, Los Angeles; Lawrence W. Sloan, surgeon, and Thomas W. Stevenson, surgeon, both of New York. Other speakers are O. Spurgeon English, psychiatrist, Philadelphia; Louis S. Goodman, pharmacologist, Salt Lake City; C. Gordon Heyd, surgeon, New York; Albert W. Holman, obstetrician and gynecologist, Portland, Ore.; William S. Middleton, internal medicine, Madison, Wis., and Richard H. Young, Salt Lake City. Among the subjects to be discussed are recent advances in drug therapy, infection of the genitourinary tract, present status of plastic surgery, current therapeutic procedures in coronary disease and eye changes associated with thyroid disease, and hydatid mole and chorionepithelioma. There will be seminars in obstetrics, gynecology and surgery Thursday afternoon, one in phychiatry and internal medicine and another in eye, ear, nose and throat on Friday afternoon. The Woman's Auxiliary will have its annual meeting at the Hotel Utah, where the annual banquet will be held Friday evening.

WEST VIRGINIA

Heart Association Meeting.—The fall meeting of the West Virginia Heart Association will be held at the American Legion Home, Parkersburg, October 2. The case presentation and round table discussion, beginning at 2 o'clock, will be followed by a joint dinner meeting with the Parkersburg Academy of Medicine at 6:30. Dr. A. Carlton Ernstene, Cleveland, will speak at the dinner on "Curable Types of Heart Disease." Further information may be obtained from Dr. Ray H. Wharton, secretary, 955 Market Street, Parkersburg.

Dr. Hobbs to Head Department.—Dr. Milford L. Hobbs, Fairmont, has been appointed head pathologist and clinical pathologist at the West Virginia University School of Medicine, Morgantown, beginning September 1. He succeeds Dr. Clement C. Fenton, who died May 28. Dr. Hobbs, a graduate of Washington University School of Medicine, St. Louis, 1931, was assistant professor of pathology at the University of Vermont College of Medicine, Burlington, before locating in Fairmont in 1946 as pathologist at the Fairmont General Hospital.

GENERAL

Grants for Allergy Research.—The American Allergy Fund is offering a number of grants for scientific research not to exceed $3,500 each year to individual investigators. Both medical and nonmedical scientists are invited to apply for grants. Preference will be given problems immediately related to allergy, although investigations in physiology, biochemistry, pharmacology, immunology, genetics and other basic sciences are solicited. Applications should be sent to the American Allergy Fund, 525 Erie Building, Cleveland 15, Attention: Scientific Council. President of the board of the American Allergy Fund, organized a little more than a year ago, is Dr. Jonathan Forman, editor of the *Ohio State Medical Journal*, and Dr. Anton J. Carlson, University of Chicago, is head of the Scientific Advisory Council.

Fellowship Available in Rheumatic Disorders.—New York University College of Medicine and the Fourth Medical Division of Bellevue Hospital have announced the one year nonresident Robert Trubek Fellowship in Rheumatic Disorders open to graduate-physicians with at least two years of previous training in internal medicine or its equivalent. Preference will be given candidates with a background of biochemistry, biophysics or any of the basic sciences. The fellowship will combine supervised research and special clinical training in the rheumatic disorders under the direction of Dr. Otto Steinbrocker. It carries an annual stipend of $2,500, appointment renewable for an additional year by mutual agreement. Applicants for the 1947-1948 fall session should file applications not later than October 1, together with their educational and professional qualifications accompanied by two letters of recommendation from physicians under whose supervision previous assignments have been completed. Address the Robert Trubek Fellowship Committee, Fourth Medical Division, Bellevue Hospital, 492 First Avenue, New York 16.

Hospital Survey Published.—The Commonwealth Fund has published a volume on Hospital Care in the United States, which summarizes the entire findings of the intensive, two year survey of hospital facilities by the Commission on Hospital Care and lists 181 specific recommendations for the future development of hospital care in the United States. The commission estimates that there is need for an additional 195,000 general hospital beds besides the 25 per cent of existing hospital beds that are outmoded and should be replaced. It indicates that the public would be better served by about 40 per cent fewer but larger hospitals. At present building costs it would require about $1,800,000,000 to construct and equip hospitals necessary to meet the estimated current deficiency. The Commission on Hospital Care, a nongovernmental public service committee, was established in October 1944. Its purpose was to conduct the survey with particular reference to the part hospitals should play in the future life of the people. It was inaugurated by the American Hospital Association and financed by grants from the Commonwealth Fund, the W. K. Kellogg Foundation and the National Foundation for Infantile Paralysis. Full cooperation was given by the U. S. Public Health Service. Copies of the 700 page volume can be secured from the Commonwealth Fund, New York City, at $4.50 each.

Cancer Grants and Fellowships Available.—The Committee on Growth of the National Research Council, acting for the American Cancer Society, is entertaining applications for grants and fellowships. Applications for extension of existing grants in cancer research will be received until October 1, applications for new grants until November 1. Applications for fellowships and senior fellowships in cancer research may be submitted until December 1. Final decision on applications submitted during this period will be made in most cases soon after February 1. Fellowships may begin at any time determined by the committee, though ordinarily these also will take effect July 1. During the past two years the American Cancer Society, acting on the recommendation of the Committee on Growth, has awarded 176 grants and 47 fellowships representing a total expenditure of some $2,700,000. The committee will continue to recommend support of biologic and clinical research dealing broadly with phenomena relating to growth, typical or neoplastic. In the formulation of this program the committee will be guided, as in the past, by the advice of some 120 scientists grouped in twenty panels comprising its sections on biology, chemistry, physics, chemotherapy, clinical investigations and fellowships. Communications regarding grants or fellowships should be addressed to Executive Secretary, Committee on Growth, National Research Council, 2101 Constitution Avenue N. W., Washington 25, D. C.

Prevalence of Poliomyelitis.—Reports of cases of poliomyelitis for the periods indicated have been received from the division of public health methods, U. S. Public Health Service:

	Week Ended			Total to		Total *	
Division and State	Aug. 30, 1947	Aug. 31, 1946	Median, 1942-1946	Aug. 30, 1947	Aug. 31, 1946	March 16-Aug. 30, 1947	March 17-Aug. 31, 1946
New England:							
Maine	4	4	1	15	15	12	15
New Hampshire	2	7	3	14	83	10	82
Vermont	6	0	0	20	17	12	13
Massachusetts	26	18	20	111	81	104	77
Rhode Island	18	5	1	78	18	77	18
Connecticut	13	3	20	45	39	42	31
Middle Atlantic:							
New York	53	89	89	298	544	262	511
New Jersey	26	21	21	90	128	84	122
Pennsylvania	31	14	14	148	123	134	111
East North Central:							
Ohio	39	43	33	192	319	182	304
Indiana	7	27	22	51	134	35	129
Illinois	93	201	94	324	1,046	302	1,038
Michigan	59	87	18	185	400	161	392
Wisconsin	9	184	18	66	430	42	417
West North Central:							
Minnesota	19	208	11	105	1,820	92	1,819
Iowa	12	24	24	75	278	67	269
Missouri	10	63	29	58	541	48	534
North Dakota	11	74	2	60	235	55	235
South Dakota	3	22	1	7	241	5	241
Nebraska	13	51	9	117	264	110	263
Kansas	4	48	15	53	461	35	457
South Atlantic:							
Delaware	28	1	3	99	9	99	9
Maryland	8	10	3	41	49	35	47
District of Columbia	1	4	4	6	12	4	11
Virginia	7	8	8	61	68	51	62
West Virginia	4	5	5	35	42	31	39
North Carolina	9	5	5	71	65	56	58
South Carolina	0	0	1	10	18	9	15
Georgia	4	8	6	43	109	36	101
Florida	3	10	2	64	447	39	398
East South Central:							
Kentucky	0	6	6	22	73	21	70
Tennessee	6	18	5	47	103	35	94
Alabama	1	24	2	34	312	21	309
Mississippi	3	20	3	33	206	16	189
West South Central:							
Arkansas	3	23	4	†48	224	†37	212
Louisiana	1	16	1	42	245	24	226
Oklahoma	1	14	14	34	233	23	227
Texas	3	23	23	128	687	103	659
Mountain:							
Montana	2	9	2	17	72	15	56
Idaho	12	2	1	79	12	69	12
Wyoming	0	14	2	11	75	8	74
Colorado	0	77	15	33	579	28	578
New Mexico	2	11	1	15	88	12	87
Arizona	3	7	1	26	74	23	71
Utah	0	11	11	7	55	2	49
Nevada	0	0	0	0	3	0	3
Pacific:							
Washington	11	28	19	77	192	69	159
Oregon	7	15	11	41	74	36	70
California	25	218	33	561	1,091	412	1,004
Total	602	1,780	...	†3,797	†12,434	†3,185	11,967
Median, 1942-1946	...	....	956	6,156		5,759	

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* Last two columns show reported incidence since approximate seasonal low week (week ended between March 15 and 21).

†Figures changed by corrected reports.

FOREIGN

Malaria Control in Greece.—The United Nations' World Health Organization, which is continuing malaria control measures in Greece begun by UNRRA, from January to June sprayed 15,250 Greek villages with DDT. Last year 4,005 villages received the spray treatment from UNRRA.

Typhoid in China.—A typhoid epidemic that has filled 20 per cent of the beds in four hospitals at Foochow, Fukien province capital, was reported August 16 by UNRRA's China office. The city of 350,000 has no public water supply. Seven water filtration stations are being constructed in an attempt to check the outbreak.

French Congress of Medicine.—The twenty-sixth French Congress of Medicine will be held in Paris, October 16-18, at the Faculty of Medicine under the chairmanship of Dr. André A. Lemierre, Paris. Presentation and discussion of papers on genetics will be given on Thursday, papers and discussions on antihistaminics on Friday and presentation and discussion of papers on pulmonary cysts on Saturday. Further information may be obtained from the Office of the Secretary, the Faculty of Medicine, Room Beclard, Street of School of Medicine, Paris.

Deaths

J. Bayard Clark ⊕ New York; born in Elizabeth, N. J., in 1869; Columbia University College of Physicians and Surgeons, New York, 1898; an Affiliate Fellow of the American Medical Association; fellow of the American College of Surgeons; member of the Connecticut State Medical Society and the American Urological Association; member, past president and vice president of the American Association of Genito-Urinary Surgeons; formerly professor of urology at the New York Polyclinic Medical School and Hospital; specialist certified by the American Board of Urology; served during World War I; affiliated with the Greenwich (Conn.) Hospital, Elizabeth (N. J.) General Hospital, Doctors Hospital and the New York City Hospital; author of "Some Personal Recollections of Dr. Janeway"; died May 20, aged 78, of heart disease.

Hilbert Francis Day ⊕ Cambridge Mass.; born in Boston in 1879; Harvard Medical School, Boston, 1905; professor of clinical surgery at the Tufts College Medical School in Boston; formerly on the faculty of his alma mater, past president of the Cambridge Tuberculosis and Health Association; member of the founders group of the American Board of Surgery; member of the New England Obstetrical and Gynecological Society and the New England Pediatric Society, fellow of the American College of Surgeons; on the staffs of the Boston Dispensary, Cambridge Hospital, Boston Floating Hospital, Masonic Hospital, Shrewsbury, State Prison Colony Hospital, Norfolk, and the Massachusetts Women's Hospital in Boston; died May 16, aged 68, of heart disease.

Andrew Johnson Browning, Portland, Ore.; born in Washington, D. C., in 1881; George Washington University School of Medicine, Washington, D. C., 1908; associate clinical professor of ophthalmology at the University of Oregon Medical School; specialist certified by the American Board of Ophthalmology; served as president and secretary of the Western Ophthalmological Society; member of the American Academy of Ophthalmology and Otolaryngology and the Pacific Coast Oto-Ophthalmological Society; on the staffs of the Doernbecher Memorial Hospital for Children and the Multnomah Hospital; a member of the board of trustees of the Good Samaritan Hospital, where he died May 20, aged 66.

Walter Ashby Frankland ⊕ Washington, D. C.; born in Baltimore in 1867; Columbian University Medical Department, Washington, 1896; served overseas during World War I; formerly associated with the U. S. Public Health Service; past president of the Washington Medical and Surgical Society; member of the Association of Military Surgeons of the United States; at one time on the faculty of George Washington University School of Medicine; served on the staffs of the Casualty and George Washington University hospitals, died in the U. S. Naval Hospital in Bethesda, Md., May 30, aged 79, of lobar pneumonia and arteriosclerosis.

Benjamin Jaffee Birk ⊕ Milwaukee; born in Michigan City, Ind., Aug. 17, 1894; Rush Medical College, Chicago, 1919; fellow of the American College of Physicians; member of the Association of Military Surgeons of the United States, Wisconsin Heart Association and the American Heart Association; on the staff of the Mount Sinai Hospital; served during World War I; during World War II served in the China-Burma-India theater for thirteen months and was awarded the Legion of Merit with oak leaf cluster for exceptional work in China in 1944; died in Thiensville, Wis., June 28, aged 52, of heart disease.

Harold William Campbell, Philadelphia; born in Bridgeport, Conn., April 1, 1905; University of Colorado School of Medicine, Denver, 1941; member of the American Medical Association and the Colorado State Medical Society; interned at St. Joseph's Hospital in Denver and served a residency at the Evangelical Lutheran Sanatorium in Wheat Ridge, Colo.; instructor in medicine at the University of Pennsylvania and clinic physician at the Henry Phipps Institute for the study, treatment and prevention of tuberculosis; died May 5, aged 42, of chronic nephritis.

Claude Miller Ament, Tulsa, Okla.; Barnes Medical College, St. Louis, 1901; at one time on the faculty of his alma mater; died May 10, aged 71.

Coral Ray Armentrout ⊕ Houston, Texas; Keokuk (Iowa) Medical College, College of Physicians and Surgeons, 1904; fellow of the American College of Surgeons; served during World War I; formerly on the faculty of his alma mater; on the staffs of the Memorial Hospital and St. Joseph's Infirmary; died May 3, aged 69, of heart disease.

Lewis George Babcock, San Marino, Calif.; College of Physicians and Surgeons, Los Angeles, 1921; member of the American Medical Association; died in the Huntington Memorial Hospital, Pasadena, June 5, aged 51, of acute myelogenous leukemia.

Carlos M. Balli, Monterrey, Nueva Leon, Mexico; Universidad Nacional Facultad de Medicina, Mexico, D.F., 1918; died in May, aged 59.

Cobb Rutherford Barksdale, Blakely, Ga.; University of Georgia Medical Department, Augusta, 1900; member of the American Medical Association; served as mayor and member of the city council; for many years county physician; died in the Georgia Baptist Hospital, Atlanta, May 28, aged 70, of pneumonia and carcinoma.

Charles Wallace Bassett ⊕ St. Louis; Washington University School of Medicine, St. Louis, 1908; died in Madison, N. Y., June 18, aged 72.

Oscar Israel Baumann ⊕ New York; Columbia University College of Physicians and Surgeons, New York, 1910; served during World War I; affiliated with the Mount Sinai Hospital and the Hospital for Joint Diseases; died May 17, aged 59, of coronary sclerosis with myocardial infarction.

Howell Llewellyn Begle ⊕ Detroit; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1905; specialist certified by the American Board of Ophthalmology; member of the American Academy of Ophthalmology and Otolaryngology; for many years on the staff of the Children's Hospital; served as secretary of the Michigan Association of Industrial Physicians and Surgeons; past president of the Detroit Ophthalmological Society; died June 5, aged 70.

Gertrud Behrens, New York; Christian-Albrechts-Universität Medizinische Fakultät, Kiel, Prussia, 1919; member of the American Medical Association; died May 19, aged 53.

Sanford Blum ⊕ San Francisco; University of California Medical School, San Francisco, 1896; formerly on the faculty of his alma mater; died May 27, aged 74, of heart disease.

George Washington Boner, North Madison, Ind.; Hospital College of Medicine, Louisville, Ky., 1906; member of the American Medical Association; served during World War I; formerly assistant physician at the Muscatatuck State School in Butlerville; since July 1945 superintendent of the Madison State Hospital, where he died May 30, aged 69, of coronary occlusion.

Robert Campbell Boothe, Fort Pierce, Fla.; Hospital College of Medicine, Louisville, Ky., 1905; member of the American Medical Association; member of the draft boards during World wars I and II; died May 20, aged 72, of cerebral hemorrhage.

Marcus Bossard, Spring Green, Wis.; Bellevue Hospital Medical College, New York, 1886; died May 8, aged 82, of carcinoma of the liver.

George Floyd Bott, Victor, Iowa; State University of Iowa College of Homeopathic Medicine, Iowa City, 1906; died May 7, aged 70, of coronary thrombosis.

Kent Amos Bowman ⊕ Johnstown, Pa.; Jefferson Medical College of Philadelphia, 1914; served as vice president of the Cambria County Medical Society; a medical officer in the U. S. Army during World War I; affiliated with Conemaugh Valley Memorial Hospital and Mercy Hospital, where he died June 4, aged 57, of carcinoma of the prostate with metastasis.

Harry August Brandes ⊕ Bismarck, N. D.; Washington University School of Medicine, St. Louis, 1912; specialist certified by the American Board of Internal Medicine; fellow of the American College of Physicians; past president of the North Dakota State Medical Association; served as a member of the state board of medical examiners; on the staffs of the Bismarck and St. Alexius hospitals; died May 12, aged 59, of multiple myeloma.

Nathaniel Perkins Breed, Douglaston, N. Y.; Harvard Medical School, Boston, 1901; died May 11, aged 70, of heart disease.

Ellen Martin Brimer, San Diego, Calif.; Gross Medical College, Denver, 1897; died May 5, aged 77.

Diedrich George Brunjes ⊕ Chicago; the Hahnemann Medical College and Hospital, Chicago, 1910; served during World War I; on the staffs of the Chicago Memorial and Illinois Central hospitals; died May 17, aged 60, of coronary thrombosis.

Edward Henry Buffum, Manchester, N. H.; Middlesex College of Medicine and Surgery, Waltham, Mass., 1937, for many years affiliated with the Nassau County Sanatorium in Farmingdale, N. Y.; died June 25, aged 44.

Joseph E. Burnham, Wayne, Ohio; Cleveland Medical College, Homeopathic, 1895; died May 21, aged 82, of coronary thrombosis.

Alton Cook Campbell ⊕ Raleigh, N. C.; University of North Carolina School of Medicine, Raleigh, 1910; served during World War I; member of the Raleigh township school board; for many years physician at the North Carolina State College; on the staff of the Rex Hospital; died June 12, aged 63.

Burg Chadwick, Smethport, Pa.; University of Buffalo School of Medicine, 1887; Jefferson Medical College of Philadelphia, 1888; member of the American Medical Association; for many years physician for the McKean County Home and the McKean County Jail; served on the staff of the Bradford Hospital; died May 8, aged 79, of carcinoma of the prostate.

Eben P. Clapp, Pasadena, Calif.; the Hahnemann Medical College and Hospital, Chicago, 1882; died in the Huntington Memorial Hospital May 8, aged 88, of bronchopneumonia and arteriosclerosis.

Walton Wheeler Cobb, Fort Worth, Texas; Kentucky School of Medicine, Louisville, 1895; past president of the Tom Green-Coke-Crockett Concho-Irion-Sterling-Sutton-Schleicher Counties Medical Society; served as city health officer of San Angelo, where he was on the staffs of the Shannon West Texas Memorial Hospital and St. John's Hospital; died in the Methodist Hospital May 17, aged 74, of uremia.

Robert Calvin Coomer, Richmond, Ky.; Kentucky School of Medicine, Louisville, 1902; member of the American Medical Association; died in the Pattie A. Clay Infirmary May 5, aged 73, of carcinoma.

Alfred G. Coughlin, Athens, Pa.; Baltimore Medical College, 1905; for many years president of the board of directors of the school district and physician for the local board of health; on the staff of the Robert Packer Hospital in Sayre; president of the Athens National Bank; director of the Athens Building and Loan Association and the chamber of commerce; died May 1, aged 63, of hypertensive cardiovascular disease.

F. W. Cox, Pocahontas, Ark. (licensed in Arkansas in 1903); died in the Baptist Hospital in Memphis, Tenn., May 8, aged 69, of heart disease.

William Nathan Crellin, Shohola, Pa.; Jefferson Medical College of Philadelphia, 1931; member of the American Medical Association; interned at the Frankford Hospital in Philadelphia; served as county medical director and as surgeon for the Erie Railroad Company; died May 5, aged 40, of injuries received when his automobile crashed against a tree near Monroe, N. Y.

George Hardin Curfman ⊕ Denver; Northwestern University Medical School, Chicago, 1905; member of the House of Delegates of the American Medical Association in 1925, 1945 and 1946; fellow of the American College of Surgeons; past president of the Colorado State Medical Society; chief surgeon for the Denver and Rio Grande Western Railroad; on the staff of St. Joseph's Hospital, where he died June 24, aged 69.

Frank Curtiss Davis, Palo Alto, Calif.; Johns Hopkins University School of Medicine, Baltimore, 1899; fellow of the American College of Surgeons; served during World War I; died May 30, aged 73, of acute cardiac failure and arteriosclerosis.

John Spencer Davis, Dallas, Texas; Medical Department of Tulane University of Louisiana, New Orleans, 1908; affiliated with St. Paul's Hospital; member of the American Medical Association; served during World War I; died recently, aged 66, of heart disease.

Dayve Boris De Waltoff, Brooklyn; University of St. Vladimira Faculty of Medicine, Kiev, Russia, 1887; died June 19, aged 81, of heart disease.

Thomas Lawrence Disque ⊕ Pittsburgh; Western Pennsylvania Medical College, Pittsburgh, 1892; assistant professor of urology at his alma mater; member of the American Urological Association; on the staffs of St. Francis, Woman's and Presbyterian hospitals; died May 7, aged 76, of carcinoma of the sigmoid.

David Cummins Donan, Morganfield, Ky.; University of Louisville (Ky.) Medical Department, 1907; member of the American Medical Association; formerly secretary of the Union County Medical Society; served during World War I; colonel, medical reserve corps, U. S. Army, not on active duty; died in Our Lady of Mercy Hospital May 16, aged 65, of cerebral hemorrhage.

John Joseph Donohue, Shamokin, Pa.; Jefferson Medical College of Philadelphia, 1911; member of the American Medical Association; served during World War I; died in the Temple University Hospital in Philadelphia, May 10, aged 62.

Joseph Alexander Doyle ⊕ Greenville, Pa.; University of Pittsburgh School of Medicine, 1918; served during World War I; fellow of the American College of Surgeons; county coroner; affiliated with the Greenville Hospital; died in the Cleveland Clinic Foundation Hospital June 21, aged 56, of pneumonia following influenza.

John B. du Bose, Humble, Texas; University of Dallas Medical Department, 1902; member of the American Medical Association; died recently, aged 70, of chronic myocarditis.

H. Rolfe Du Puy, Winchester, Va.; University of Virginia Department of Medicine, Charlottesville, 1932; member of the American Medical Association; served as deputy state and county health officer of Garrett County in Maryland, health officer of Berkeley County in West Virginia and Worcester County in Massachusetts; died May 3, aged 40.

Edgar A. Farrow, San Diego, Calif.; Columbian Medical College, Kansas City, Mo., 1899; for many years affiliated with the Indian Service; veteran of the Spanish-American War; died May 7, aged 73, of coronary occlusion.

Samuel Arthur Flaherty ⊕ Detroit; Detroit College of Medicine and Surgery, 1914; member of the American Urological Association and at one time secretary of the Detroit Branch; served with the Canadian Army during World War I; on the staffs of the Mount Carmel Mercy and Delray General hospitals; died in Lake Lure, N. C., May 8, aged 60, of coronary thrombosis.

Charles George Foertmeyer, Cincinnati; Medical College of Ohio, Cincinnati, 1895; member of the American Medical Association; died in the Deaconess Hospital May 7, aged 75, of carcinoma.

A. O. Fortney, Jewell, Kan.; Missouri Medical College, St. Louis, 1894; died in Beloit May 15, aged 81, of coronary occlusion.

John Russell Foshay ⊕ Peekskill, N. Y.; Columbia University College of Physicians and Surgeons, New York, 1909; served as a member of the county board of health and county coroner; on the staff of the Peekskill Hospital; died in Ossining June 14, aged 67, of coronary thrombosis.

Joseph Powel Franklin, Cumberland, Md.; University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, 1921; member of the American Medical Association; deputy state and county health officer of Allegany County; formerly director of the bureau of communicable diseases, Baltimore City Health Department; served during World War I and World War II; died in the Mount Sinai Hospital, Baltimore, June 15, aged 50, of carcinoma of the liver.

Harry Edwin Gabe, Indianapolis; Medical College of Ohio, Cincinnati, 1893; member of the American Medical Association; past president of the Indianapolis Medical Society; served on the city board of health; died in the Methodist Hospital June 14, aged 79, of aneurysm.

Jacques Goldberger, New York; Magyar Kiralyi Pazmany Petrus Tudomanyegyetem Orvosi Fakultasa, Budapest, Hungary, 1911; affiliated with the Saratoga Hospital in Saratoga Springs; died in the Montefiore Hospital June 5, aged 58, of adenocarcinoma of the sigmoid colon.

Irvin Hilary Griffin ⊕ Moundville, Ala.; Tulane University of Louisiana School of Medicine, New Orleans, 1934; on the staffs of the Druid City and Stillman hospitals in Tuscaloosa; died in Tuscaloosa June 1, aged 38, of coronary thrombosis.

Harry Harold Halliwell ⊕ Ilion, N. Y.; University and Bellevue Hospital Medical College, New York, 1901; died May 11, aged 67, of hernia, embolism, fecal fistula and prostatic hypertrophy.

Clarence C. Hampil, Brazoria, Texas; Louisville (Ky.) Medical College, 1892; member of the American Medical Association; past president of the Brazoria County Medical Society; received a medal and a certificate of merit for his work with the selective service board during World War II; at one time director of the First State Bank of Brazoria; died recently, aged 79, of cerebral hemorrhage and coronary occlusion.

Raymond George Earl Haymond, Waldron, Ind.; University of Louisville (Ky.) Medical Department, 1909; served during World War I; found dead June 20, aged 69.

Cecil Marvin Hitchcock, Moultrie, Ga.; University of Georgia Medical Department, Augusta, 1906; for many years county physician; examining physician for the selective service board during World War II; on the staff of the Vereen Memorial Hospital; died June 5, aged 63, of chronic nephritis and hypertensive heart disease.

Fred Garnt Hopkins ✠ East Peoria, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1905; member of the staff of the St. Francis Hospital, Peoria, of which he had been president; past president of the sanitary board: died June 14, aged 71, of leukemia.

Charles Francis Hull, Carthage, Texas; Memphis (Tenn.) Hospital Medical College, 1899; member of the American Medical Association; served as president, secretary and treasurer of the Panola County Medical Society; for many years county health officer; died recently, aged 83, of encephalomalacia and arteriosclerotic heart disease.

Otto B. Kiehl, Pittsburg, Kan ; University of Kansas School of Medicine, Kansas City, 1907; member of the American Medical Association; past president of the Crawford County Medical Society; served as city health officer; on the staff of Mount Carmel Hospital; died May 10, aged 67, of acute coronary thrombosis.

John Joseph Krager, Baltimore; University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, 1922; died recently, aged 52, of coronary thrombosis.

John B. Marcotte, Lewiston, Me.; Laval University Faculty of Medicine, Quebec, Canada, 1899; member of the American Medical Association; affiliated with St Mary's Hospital; died recently, aged 81, of carcinoma.

Bertie Mobbs, Honolulu, Hawaii; University of Louisville School of Medicine, 1910; also a graduate in pharmacy; served on the staffs of St. Francis, Queen's and Maternity hospitals; died recently, aged 70, of aneurysm of the abdominal aorta.

Edwin Corbin Neeb, Cross Plains, Texas; Baylor University College of Medicine, Dallas, 1947, internship appointment was Charity Hospital of Louisiana at New Orleans; died May 31, aged 22, of embryonal cell carcinoma.

Leroy S. S. Ott, Longdale, Okla.; Kansas Medical College, Medical Department of Washburn College, Topeka, 1910; member of the American Medical Association and the Kansas Medical Society; served as health officer of Wichita County, (Kan.); died May 4, aged 59, of coronary thrombosis.

Harry Milton Pell, Brazil, Ind.; Indiana University School of Medicine, Indianapolis, 1912; member of the American Medical Association; served during World War I; at various times county coroner, county jail physician and on the staff of the Indiana State Farm Hospital in Greencastle; on the staff of the Clay County Hospital, where he died May 30, aged 56, of cardiovascular renal disease.

Paul Lange Phillips, Norfolk, Va ; Cornell University Medical College, New York, 1930; member of the American Medical Association, American Psychiatric Association and the Connecticut State Medical Association; served during World War II; died May 11, aged 42, of coronary occlusion.

Oscar Ignatius Polk ✠ Pittsburgh; University of Pittsburgh School of Medicine, 1911; served as school director of the public schools of Braddock and on the staff of the Braddock (Pa.) General Hospital; died May 8, aged 59, of coronary occlusion.

Rose Pringle, New York; Trinity Medical College, Toronto, Ont., Canada, 1895; member of the American Psychiatric Association; for many years affiliated with the Bloomingdale Hospital in White Plains; died in Detroit May 9, aged 83, of heart disease.

Lenard L. Shlenker, Monroe, La.; Washington University School of Medicine, St. Louis, 1929; member of the American Medical Association; served during World War I and World War II; died May 5, aged 47, of cerebral hemorrhage.

Edward Augustine Stapleton ✠ Albany, N. Y.; Albany Medical College, 1904; also a graduate in pharmacy; served during World War I; died in the Memorial Hospital June 11, aged 66.

William Borden Thomas Jr. ✠ Amarillo, Texas; University of Tennessee College of Medicine, Memphis, 1932; health officer of Amarillo and Porter County; died May 3, aged 41, of heart disease.

Hartley W. Walker, Pekin, Ill.; Baltimore Medical College, 1895; member of the American Medical Association; served on the draft boards during World Wars I and II; on the staff of the Pekin Public Hospital; died June 5, aged 73, of coronary occlusion.

Otis Hillsman Whitlock, Richmond, Va.; University College of Medicine, Richmond, 1911; member of the American Medical Association; burned to death May 9, aged 60.

DIED WHILE IN MILITARY SERVICE

William Craig Flinn, Redwood Falls, Minn.; Harvard Medical School, Boston, 1943; interned at the Ancker Hospital in St. Paul; diplomate of the National Board of Medical Examiners; began active duty as a first lieutenant in the medical corps, Army of the United States, on Jan. 5, 1944; later promoted to captain; died in France July 7, 1945, aged 27, of a skull fracture received in a vehicle accident.

Jay Curtis Joslyn, Sandusky, N. Y.; McGill University Faculty of Medicine, Montreal, Que., Canada, 1945; interned at the Naval Hospital in San Diego; began active duty as a lieutenant (jg) in the medical corps of the U. S. Naval Reserve on Sept. 2, 1945; died March 20, 1946, aged 24, of myelogenous leukemia.

Herman George Klamka, Chicago; University of Illinois College of Medicine, Chicago, 1940; interned at the Cook County Hospital; captain in the medical corps, Army of the United States; killed in India May 25, 1944, aged 29, in an airplane crash.

Braulio Rodriguez Martinez, Ponce, P. R.; Howard University College of Medicine, Washington, D. C., 1942; interned at the Freedmen's Hospital in Washington, D. C.; began active duty as a first lieutenant in the medical corps, Army of the United States, on July 3, 1943; died in the Fitzsimmons General Hospital in Denver April 24, 1945, aged 29, of tuberculosis of the spine.

Reuben Jordan Maxwell, Sulligant, Ala.; Washington University School of Medicine, St. Louis, 1939; interned at St. Louis City Hospital, where he served a residency; began active duty as a first lieutenant in the medical corps, Army of the United States, in August 1941; promoted to captain and major; died while aboard the steamship *Haskell* Oct. 10, 1945, aged 32, of poliomyelitis.

Howard Mitchell, Toronto, Ont., Canada; born in New York Nov. 19, 1917; University of Toronto Faculty of Medicine, Toronto, Ont., Canada, 1941; interned at the Franklin Hospital in San Francisco; began active duty as a first lieutenant in the medical corps, Army of the United States, in August 1942; assigned to the medical detachment 376th Infantry, 94th Infantry Division at Fort Custer, Mich.; in October 1942 transferred with that division to Camp Phillips, Salina, Kan., where he served until July 1943, when he was assigned to duty with the 68th Medical Regiment at Camp Forrest, Tenn.; promoted to the grade of captain in November 1943 and assigned to duty with the 618th Clearing Company; died aboard a U. S. Army transport in the European area Dec. 12, 1943, aged 26, of acute lobar pneumonia.

Samuel Alfred Murphy, Wilkinsburg, Pa.; University of Illinois College of Medicine, Chicago, 1920; began active duty as a captain in the medical corps, Army of the United States, in April 1944; served with the Veterans Administration Facility in Pittsburgh; died in the Deshon General Hospital, Butler, Pa., June 18, 1945, aged 56, of perforation of the esophagus.

Robert Kazuo Ota, Milwaukee; Marquette University School of Medicine, Milwaukee, 1939; interned at St. Luke's Hospital and the Johnston Emergency Hospital; lieutenant, medical corps, Army of the United States; died in the Madigan General Hospital in Tacoma, Wash., Jan. 16, 1946, aged 35.

Nicholas Polites, Atlantic City, N. J.; Emory University School of Medicine, Atlanta, 1936; served an internship and residency at the James Walker Memorial Hospital in Wilmington, N. C.; interned at St. Joseph's Infirmary in Atlanta; began active duty as a first lieutenant in the medical reserve corps of the U. S. Army in 1941; promoted to captain in February 1942 and major in October 1943; killed in Germany Nov. 8, 1945, aged 38, in an airplane crash.

Morris Ruchelman, Brooklyn; Louisiana State University School of Medicine, New Orleans, 1942; interned at the Touro Infirmary in New Orleans; entered active duty in the medical corps, Army of the United States, as a first lieutenant in April 1943; promoted to captain; killed in an airplane accident in Sicily Nov. 9, 1945, aged 28.

John Hurst Wenger, Terre Hill, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1941; interned at the Philadelphia General Hospital in Philadelphia; captain, medical corps, Army of the United States; died in France June 16, 1945, aged 30.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Aug. 2, 1947.

The Outbreak of Infantile Paralysis

The outbreak of infantile paralysis, described in a previous letter, continues. New cases are announced daily both in London and throughout the country. The incidence of the disease is higher than at any time during the last thirty-five years, the period for which records have been kept. There are 112 confirmed or suspected cases in the London hospitals. As the peak period of the disease is usually in the autumn, it is thought that there may be worse to come. Owing to the outbreak, 150 London children who were to have been included in a party of 500 from industrial districts of England and Scotland going to Belgium on vacation next month have had their trip canceled. For the week ended July 26 the number of cases in Britain is expected to be not fewer than 300, compared with 177 in the week before and with the highest weekly figure of 85 in previous years. The cases are occurring in different parts of the country, and there is nothing to suggest spreading from one center. The disease is proving difficult to control because it is not always identifiable in cases of mild and indefinite illness and because it may be harbored by healthy carriers whom it is impossible to recognize. The holiday exchange of children between Britain and the European continent, which had been arranged by the World Friendship Association, has been stopped. It has been suggested that all bathing should be stopped, because of the danger of acquiring the virus.

Answering questions in the House of Commons, the minister of health stated that the present rate had never been exceeded in this country since the disease became notifiable. The best precautions were personal hygiene, avoidance of close congregation of young people and early medical advice if a young contact of a known case showed any mild or indefinite illness. One of the most discouraging features of the incidence of the disease was that it had reached its peak earlier in the year than usual. There was no evidence of the slightest connection with malnutrition. Notifications of the disease for the week ended July 26 in England and Wales numbered 302 compared with 177 in the previous week, and there is nothing to suggest that the peak has been reached; the figures suggest a further rise. Notifications reached double figures for the week ended July 26 in London (51) and in seven English counties. Although the cases are widely scattered, the incidence is by no means even. The mechanism of direct spread is still uncertain, but it has become increasingly evident that spread is usually from person to person following close contact with a case of abortive or paralytic disease during a relatively short period of infectivity, which begins a few days before any sign of illness. The latest figures published show 448 cases for the week ended August 2, an increase of 146 on the previous week and the highest for any week of the outbreak. Of these 53 occurred in London.

The British Medical Association and the National Health Service Act

For some time negotiations have been taking place between the government and the British Medical Association with regard to the National Health Service, which is now law. Concern is felt in the profession as to these negotiations because, as is usual, they have not been disclosed while in progress. At the annual representative meeting of the association, recently held in London, the chairman of the council, Dr. H. G. Dain, presented a report on the progress of the talks. The minister of health, Mr. Bevan, agreed to enter into discussions of a comprehensive character in which the possibility of fresh legislation was not ruled out. Subcommittees of the negotiating committee of the association were set up to deal with various sections of the act under such headings as specialists and consultants, hospital service, general practice, public health, superannuation, ophthalmic services and mental services. Discussions took place between these subcommittees and the officers of the ministry. These discussions were comprehensive, and no attempt was made to limit them or tie the subcommittees down to regulations only. They stuck to their principles and argued in favor of them as vigorously as they could. They did not make concessions or retreat from any position taken up. No fear need be entertained that the discussions involved acceptance of things of which the association would not approve. A detailed report on the subject will later be given to the representative body of the association. In order to ensure that the arguments used to the officers of the Ministry of Health may not reach the minister in a milder form, he will be offered a report in writing prepared by the subcommittees. Further, it is proposed to ask him to talk personally with some of the subcommittees—those representing consultants and specialists, general practitioners and public health.

A resolution was introduced at the meeting of the representative body asking the negotiating committee to make an early report of the progress and discussions with the minister, because of the uneasiness felt in the profession as to what was going on behind closed doors. After discussion, in which the chairman of the council of the association pointed out that there was no alteration of the position to report and would not be until the minister's reply was forthcoming, the resolution was put to the meeting and lost by a large majority.

International Congress of Physicians

Since the end of the war London has become almost the sole meeting place of international congresses. In September there will be a medical one, to be followed almost immediately by a surgical one.

An international conference of physicians is to be held at the Royal College of Physicians, London, on September 8, to continue daily at various institutions and hospitals in London until September 12. In addition to the scientific program there will be a social one, which will include a government luncheon, a banquet at the Guildhall and a reception at the College. Admission is confined to medical practitioners and is by invitation only. Application for admission must be made to the organizing secretary, Dr. G. B. Mitchell-Heggs, in care of Royal College of Physicians, Pall Mall East, London, S. W.

Section of Cardiology: Surgery of Congenital Heart Disease, Pulmonary Heart Failure (with Section of Disorders of the Chest). Use of the Phonocardiogram in Clinical Cardiology. Repetitive Paroxysmal Tachycardia.

Section on Disorders of the Chest: Transient Pulmonary Infiltrations. Pulmonary Heart Failure. Sarcoidosis (with Section of Dermatology). BCG Vaccination.

Section of Dermatology: Vitamin D in the Treatment of Cutaneous Tuberculosis Sarcoidosis.

Section of Neurology: Malnutrition of the Nervous System. The Role of the Pyramidal System in Movement. Spinal Fluid. and Cerebral Fluid—A Comparison. The Functions and Connections of the Frontal Lobes (with Section of Psychiatry).

Section of Pediatrics: Surgery of Congenital Heart Disease. Hemolytic Anemia. BCG Vaccination (with Sections of Social Medicine and Disorders of the Chest).

Section of Psychiatry: Genetics in Relation to Mental Deficiency. Psychodynamics of Depression. Social Surveys (with Section on Social Medicine). The Functions of the Frontal Lobes (with Section of Neurology).

Section of Social Medicine: Care of the Aged and Infirm. Social Medicine in the Curriculum. Social Surveys. BCG Vaccination.

Section of General Medicine: Penicillin. Infective Hepatitis. Pain.

International Congress of Surgeons

The twelfth congress of the International Society of Surgery will be held in London from September 14 to 20. The secretary is Mr. H. W. S. Wright, 9 Weymouth Street, London, W. 1. Applications for membership in the society may be made at any time.

BELGIUM

(From Our Regular Correspondent)

Aug. 1, 1947.

Treatment of Persistent Ductus Arteriosus and Coarctation of Aorta

At the society of surgery Dr. G. Coryn reported observations made during a stay in Stockholm with regard to the technic used by Dr. Clarence Crafoord in the surgical treatment of persistent ductus arteriosus and coarctation of the aorta.

In cases of persistent ductus arteriosus, Crafoord found retardation of statural development in only 10 per cent of his patients. He thinks that, in view of the poor prognosis, the diagnosis of the persistence of the ductus constitutes an absolute indication for operation. Seventy patients without complications have been operated on with 1 death. Of 7 patients with malignant endocarditis, 5 were successfully operated on and 2 died.

In describing the technic, Crafoord rejects the anterior approach. Contrary to Sellors, Crafoord thinks that the caliber and length of the ductus arteriosus varies in different subjects and that they decide the mode of treatment. If the duct is long and wide, the double ligature is employed and several drops of a 60 per cent dextrose solution are injected between the ligatures. If the duct is very short and very large, it is necessary to interrupt the flow of the blood in the aorta between two clamps, partially in the pulmonary artery, sectioning the duct and suturing the two gaps.

Crafoord thinks that coarctation of the aorta is related to the involution of the ductus arteriosus. The diagnosis is based on the chief sign of disparity between the arterial pressure of the upper and lower extremities. The prognosis being unfavorable, indication for surgery is absolute. It is, however, feasible only if the narrowing is located upstream to the subclavian artery. End to end suture must be done after *resection* of the narrowed constricted portion. Fifteen patients have been operated on with a single death.

Quinine in the Belgian Congo

Bruxelles-médical recalls that it was one of the very first to concern itself with the production of quinine in the Belgian colonies in Africa. Since then this question has progressed rapidly. The invasion of the Netherlands Indies by the Japanese gave to the Congo quinine a place of first importance. The Belgian Congo was in effect the only African colony where the cultivation of cinchona was intensified to the point of undertaking to manufacture of quinine right there. The work was consigned to a governmental directorate controlling not only the manufacture and the sale but also the purchase of the cinchona bark from the planters. At the return to more normal conditions the present organization will be completely modified. Negotiations to this effect are going on between the minister of colonies, the planters and interested organizations. Agreements in principle have been reached. The quinine office and the directorate of the Congo will be replaced by a cooperative joining all those interested with the participation and under the control of the government. The manufacture of quinine will be continued in the Congo, where the cultivation of cinchona will be intensified to a maximum.

Children and the War

Lust presents a study in *Scalpel* on the influence of the food supply during the German occupation on the birth rate, the infant morbidity and mortality and maternal lactation. He interprets the statistics on the birth rate and infant mortality during the German occupation on the basis of an investigation in forty infant consultation centers in urban and rural localities of Walloon and Flanders. The number of births decreased during the occupation from 130,000 in 1939 to 100,000 in 1941; the birth rate then decreased from 170,000 in 1913 to 85,000 in 1917.

The infant mortality rate, which during the years preceding the invasion remained stationary at about 8 per cent, increased at least at the beginning of the occupation, reaching above 9 per cent. This rather high infant mortality cannot be attributed to the frequency of congenital debility of the newborn, to the poor nutrition of the nurslings, which remained satisfactory throughout the entire war, to acute infectious diseases, which are not abnormally frequent, or to tuberculosis.

Too many of the mothers do not make the necessary effort to nurse their newborn. The percentage of infants being entirely or partly maintained by breast feeding at the time of their admission at nursling consultation centers at the age of 6 weeks was only 35 per cent in 1939. This percentage exceeded 50 per cent at the onset of the occupation; since then this percentage has tended to diminish every year.

Anilinism

Merevelde reported in the *Revue médicale de Louvain* a number of cases of aniline intoxication among workers and other persons. Among the latter there was a child aged 9 months who was found in deep cyanosis, with attacks of vomiting. The child had been in a kitchen where the mother had dried a brown leather garment which had been dyed with aniline dye. Merevelde discusses the chemical properties of aniline, and symptoms of acute and chronic intoxication. He cites personal investigations to which he exposed himself with the aim of clarifying the pathogenesis of the intoxication (variations in the hemogram, the iron content of the plasma, the rapidity of the sedimentation speed and the changes in vitamin C). In cases in which acute and severe cyanosis or coma exists, the chief aim of treatment should always be the prompt employment of drugs which augment the respiratory capacity, such as nikethamide. In extremely severe cases venesection is indicated as well as transfusion and injection of methylene blue. The further treatment must aim to counteract the anemia.

Professor A. P. Dustin

The Royal Academy of Medicine paid homage to Professor A. P. Dustin. The funeral eulogy was delivered by Professor Dalcq, who recalled how, as prorector of the university and as president of the faculty of medicine, the eminent scientist was arrested in the tragic hours of the Nazi occupation and incarcerated for three months at the citadel of Huy, where each evening the quarters of the hostages were transformed into a seminary of studies, of which Dustin was the most enthusiastic supporter. He wore himself out like a true patriot and was proud of the salutary effect which his attitude had on the oppressed population. His sudden death after an afternoon of microscopic studies was a magnificent example of civic and scientific courage. Corresponding member of the academy since 1921 and titular since 1931, A. P. Dustin, son of Pierre Dustin, communal administrator to whom Brussels chiefly owes the creation of its port, and of an intelligent and cultured mother, was at the same time an eminent neurologist, histologist and embryologist. After research work in the laboratory of Professor Prenant and in that of Roscoff, he became professor at the age of 25 years. During World War I he distinguished himself by his work in neurosurgery. For twenty years he occupied the chair of neuropsychology at the War College. One is astounded at the extent and importance of his studies on cancerology, the karyoclastic poisons, the technic of biopsies, histophysiology, his numerous conferences in Belgium and in foreign countries, the great number of students that surrounded him in his laboratory, the variety of his literary and artistic culture, his administrative competence and his rare talent in lecturing and persuasion.

Correspondence

MEDICAL MISSION TO AUSTRIA

To the Editor:—It occurred to the director of the Medical Mission to Austria that a few comments on our experience of the past five or six weeks might be of interest to readers of The Journal. The mission has been operated by the Unitarian Service Committee under the auspices of the World Health Organization of the United Nations. It represents the first such mission to be sent by the World Health Organization into a foreign country for the purpose of exchanging ideas with university groups. Its eight physicians from the United States and two from Switzerland have held discussions on medical progress in physiology, pharmacology, cancer research and genetics, internal medicine, infectious diseases, neuropsychiatry, general surgery, neurosurgery and anesthesia. At the invitation of the Austrian minister of public welfare and of the various faculties, the group has been received at Vienna, Graz and Innsbruck. Formal receptions have been followed by a series of prepared lectures and by informal discussions with individual groups or with individual faculty members. The facilities of the state and of the various Allied commands have been put at our disposal; and important help has been freely given by the United States legation in Vienna and by Colonel Cottrell, the World Health Organization representative in Austria.

Despite differences in language and in academic traditions, we have had few real difficulties once the nature of the mission became understood. University doors have been opened wide, and in most instances there has been free and informal discussion. The free interchange of ideas has been stressed and accomplished. Because of the isolation of the Austrian clinics from the outside world during the war, we have been able to present new ideas and new procedures which, in the main, have been welcome. Advances in surgical procedure and anesthesia have been demonstrated and have created wide interest. Newer physiologic concepts and recent clinical developments similarly have been received usually with enthusiasm.

As material difficulties exist, owing to lack of equipment, drugs and food, many therapeutic measures have met with somewhat qualified enthusiasm. The practical realities of an impoverished and occupied country preclude easy acceptance of scientific measures that people in the United States take for granted. Nevertheless with few individual exceptions an interest has been encountered throughout our stay. All of us have made new professional friendships that may presage a future mutual interchange of ideas of real value.

The immediate and practical result of a mission such as this is less clear. In a country where fear and uncertainty are universal, where nutrition is marginal and where the necessities of life are difficult to obtain, stimulating scientific thinking can be accomplished only by intense personal effort and sacrifice. Austria and Austrian physicians are acutely aware of the immediate problems of political and physical survival that are almost insuperable. It is not surprising, therefore, that at times we have encountered apathy and discouragement and a concern for the immediate present.

In the universities the remaining professors are overworked. The student bodies are so large that they are unwieldy and teaching for the most part must be purely didactic. Supplies of the simplest nature are so limited that only the simplest procedures can be carried out in most instances. Deficiencies in drugs are everywhere apparent, and makeshift therapy which is frequently ineffective may represent the only possible approach to medical problems. Special diets with adequate caloric and protein content are practically unobtainable. Medical literature from 1938 to the present is notable for its absence.

The immediate situation is one of great difficulty, and no one is more aware of this than the majority of the faculty members. The most serious lack in the immediate future is the large number of only partially trained younger men in all departments of the medical schools. Losses by war, political and racial purges and displacements have left a large number of important subordinate positions and some major posts that can be filled satisfactorily only after the lapse of years. In spite of difficulties, many of the abler men are carrying a tremendous overload of teaching and practice with a courage and devotion to academic traditions that is inspiring.

The experience of the mission as far as its members are concerned has been of great value. We have proved, we think, that a sympathetic approach by experienced, trained men can meet with a friendly reception in spite of traditional difference of thought and in spite of material and psychologic differences inherent in a postwar situation. The practical contributions of the mission are difficult to evaluate at close range but are of real magnitude. To ourselves and to our Austrian hosts this mission has effected an exchange of intangible values that may be of great importance.

Chester M. Jones, M.D., Innsbruck, Austria.

DERMATITIS DUE TO QUINACRINE HYDROCHLORIDE (ATABRINE)

To the Editor:—The paper by T. W. Nisbet in The Journal May 31 might be open to criticism on one small point on page 447, where one finds "It has been stated that this symptom complex did not occur in the Mediterranean area though certain units were in malaria-infested districts and the troops were taking quinacrine hydrochloride. However, this is not the case, and several examples of the lichenoid type of eruption occurring in British soldiers have been presented before the Section on Dermatology of the Royal Society of Medicine, although the causative factor of quinacrine hydrochloride was not recognized."

In September and October 1943 in Algeria a series of both the lichenoid and eczematous types of drug eruption due to quinacrine hydrochloride were observed and discussed by Major L. M. Nelson, M. C., A. U. S., Major H. C. Hair, M. B. E., R. C. A. M. C., and myself. At this time we considered the possibility of this strange rash being either a multiple hypovitaminosis or an eruption due to mepacrine, but the patients could not be kept under observation, as the three of us were transferred to Italy.

We saw a considerable number of men suffering from similar manifestations in Italy and discussed its etiology with Major R. N. Buchanan, M. C., A. U. S. In 1944 Major Hair and I reported on the dermatosis to the War Office in London, but publication was withheld until the end of 1946. This report, without any alterations, was published in the *British Journal of Dermatology and Syphilis* (**58**:263, 1946). Major Nelson similarly forwarded a report which was published in the *Archives of Dermatology and Syphilology* (**55**:13 [Jan.] 1947).

As Dr. Nisbet's paper was read in July 1946 before the Section on Dermatology and Syphilology of the American Medical Association, he could not possibly have been aware of the article by Hair and myself, which was not published until November/December of that year. It seems only right to explain that dermatologists in the Mediterranean area were not mentally asleep at their posts and had recognized these cases about the same time (if not before) as the dermatologists in the Pacific.

G. A. Grant Peterkin, M.D., Edinburgh, Scotland.
Assistant Physician, Skin Department, Royal Infirmary.

Medical Motion Pictures

FILM REVIEWS

The Technic of Atraumatic Convulsive Therapy. Prepared in 1947 by Matthew Brody, M.D., Department of Neurology, Jewish Hospital and the Division of Neuropsychiatry, Brooklyn Hospital, Brooklyn. 16 mm., color, silent, 400 feet (one reel). Showing time sixteen minutes. Procurable on loan from the Author: 41 Eastern Parkway, Brooklyn 17.

This film begins by illustrating the induction of an electroshock convulsion in a woman aged 52 diagnosed as suffering from an "involutional melancholia." The technic first shown is purported to be "orthodox," yet the patient is treated fully clothed and apparently corseted; also she is made to lie on a soft couch, and her convulsive movements are restrained only by the physician and a nurse. Subsequent scenes illustrate what are represented as improvements in this technic; namely, 200 to 300 mg. of sodium pentothal is administered intravenously to diminish fear and resistance, and this is followed by the immediate injection of 0.5 to 0.75 unit of intocostrin (an active ingredient of curare) to diminish the intensity of the muscular contractions. Three or four minutes later, when the patient can no longer raise her head, the current is passed through the cranial electrodes and breathing during the ensuing convulsion is facilitated by the insertion of a rubber airway. These technics are shown in the treatment of a young man labeled "Dementia Precox, Catatonic Type," a woman aged 65 with an "Agitated Depression" and [sic] arteriosclerosis with aortic dilatation, and finally in a girl aged 17 years with hebephrenia and active pulmonary tuberculosis.

The scenes are well photographed and clearly subtitled, although there is unnecessary preoccupation with details such as the filling of syringes and the mode of venipuncture. The great defects in this film, however, lie not in its subject matter but in its basic orientation and intent. The title of the film is misleading, since evidence is accumulating that (*a*) the passage of a 60 cycle alternating current through the brain for 0.3 to 0.5 second is inevitably traumatic to cerebral tissues, and (*b*) such treatment has little or no lasting curative value in schizophrenia; indeed, electroshock is definitely contraindicated in many cases so diagnosed. The film is very remiss in neglecting to emphasize the dangers and complications inherent in the intravenous administration of powerful drugs such as pentothal and curare, and the great care that must be used in administering electroshock to patients with cardiovascular, pulmonic and other systemic diseases. On the contrary, the film as a whole and the concluding subtitles in particular convey the impression that, if the modifications of technic are employed as illustrated, electroshock therapy can be given to almost any one in an office anteroom, with little or no danger of serious complications. Neuropsychiatrists experienced in the field know better; but if the film is addressed to the general practitioner it conveys dangerous misinformation. For this reason the film cannot be recommended for general distribution.

Ether for Anesthesia. Produced in 1946 by Audio Productions, Inc., New York. 16 mm., black and white, sound, 750 feet (one reel). Showing time twenty-one minutes. Procurable from Mallinckrodt Chemical Works, St. Louis 7.

This excellent motion picture presents in an interesting fashion the detailed history of the chemical production of ether and a brief view of the contrast between its present day application in anesthesiology and its use in Morton's crude inhaler a century ago. A considerable part of the film is devoted to the evolution of methods of distillation from the times of Aristotle and Pliny, through the first synthesis of ether in 1540 by Valerius Gordus to the very modern chemical plant with its intricate methods of production, purification and safe packaging of ether. The photography and general treatment are excellent.

This film should be of value to chemists and pharmacists and be useful in a teaching program in those fields. It also has application in the presentation of the history of medicine. It is a useful film in the training of anesthesiologists.

The Use of Sulfathalidine in Chronic Ulcerative Colitis. Prepared by Michael H. Streicher, M.D., University of Illinois College of Medicine. 16 mm., color, sound, 650 feet (one reel). Showing time eighteen minutes. Produced in 1946 by Audio Productions, Inc., New York. Procurable on loan from Sharpe and Dohme, Inc., Philadelphia.

The film depicts the story of one form of chronic ulcerative colitis rather well. It fails to differentiate between this and the other forms of chronic ulcerative colitis, and in the pathologic description the ulcers which have always been considered to be of the secondary type are described as being the primary ulcers of this condition. The material is well prepared, and the emphasis on laboratory control is well taken.

The film has good teaching value, but there may be too much emphasis on some things. The Paulson and other personal references might well be omitted. More emphasis could be laid on the fact that this is *only one form* of therapy employed as a part of a large armamentarium used in the treatment of this disease.

The film could readily be used to give an audience a general conception of ulcerative colitis. It would be more suitable for hospital personnel such as nurses, technicians and attendants than for presentation before medical students and medical societies. This statement is made because of the stress laid on the appearance of patients and the rather general description of this disease rather than the more specific detailed description. The color photography is excellent.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

BOARDS OF MEDICAL EXAMINERS
BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Examinations of the boards of medical examiners and boards of examiners in the basic sciences were published in The Journal Sept. 6, page 53.

NATIONAL BOARD OF MEDICAL EXAMINERS

National Board of Medical Examiners: *Parts I and II.* Various centers, Sept. 15-17. *Part III.* Durham, N. C., Oct. 21-23. Exec. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia 2.

EXAMINING BOARDS IN SPECIALTIES

American Board of Anesthesiology: Part II. *Oral.* Cleveland, Oct. 5-11. Sec., Dr. P. M. Wood, 745 Fifth Ave., New York 22.

American Board of Dermatology and Syphilology: *Part II. Written.* Various centers, Sept. 15. Sec., Dr. G. M. Lewis, 66 E. 66th St., New York 21.

American Board of Internal Medicine: *Oral.* Chicago, Oct. 8-10. Asst. Sec., Dr. W. A. Werrell, 1 West Main St., Madison 3.

American Board of Neurological Surgery: *Oral.* Chicago, May or June. Final date for filing application is Feb. 1. Sec., Dr. W. J. German, 310 Cedar St., New Haven, Conn.

American Board of Obstetrics and Gynecology: *Part I. Written.* Various Centers, Feb. 6. Final date for filing application is Nov. 1. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh 6.

American Board of Ophthalmology: Chicago, Oct. 6-12. Sec., Dr. S. Judd Beach, 704 Congress St., Portland, Me.

American Board of Orthopaedic Surgery: Part II. Chicago, Jan. 22-23. Final date for filing applications is Sept. 15. Sec., Dr. F. M. McKeever, 1136 W. Sixth St., Los Angeles 14.

American Board of Otolaryngology: Chicago, Oct. 7-11. Sec., Dr. D. M. Lierle, University Hospitals, Iowa City.

American Board of Pathology: Chicago, Oct. 24-25. Final date for filing application is Sept. 15. Sec., Dr. Robert A. Moore, Euclid Ave. and Kingshighway, St. Louis 10.

American Board of Pediatrics: Dallas, Dec. 5-7. Philadelphia, Jan. 9-11. Sec., Dr. Lee F. Hill, 718 Royal Union Bldg., Des Moines 9.

American Board of Plastic Surgery: Examinations are given in April and November of each year in the home town of applicants. Sec., Dr. Louis T. Byars, 508 N. Grand Blvd., St. Louis.

American Board of Psychiatry and Neurology: *Oral.* New York, December. Final date for filing application is Sept. 15. Sec., Dr. Francis J. Braceland, 102-110 Second Ave., S. W., Rochester, Minn.

American Board of Surgery: *Written.* Various Centers, March. Final date for filing application is Dec. 1. Sec., Dr. J. S. Rodman, 225 S. 15th St., Philadelphia 2.

American Board of Urology: Chicago, February. Final date for filing application is Nov. 1. Sec., Dr. Harry Culver, 1409 Willow St., Minneapolis 4.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Malpractice: Elements of Damage Which May Be Considered.—The plaintiff sued for damages alleged to have resulted from the failure of the defendant physician to attend her during a miscarriage. From an order granting the defendant's motion for a nonsuit, the plaintiff appealed to the Supreme Court of New Hampshire.

The defendant was engaged to furnish the plaintiff necessary care and treatment during her pregnancy. Three months prior to the time the child was expected the plaintiff commenced to flow. On advice of the defendant physician the plaintiff remained in bed, and in a few days the flowing had ceased and the plaintiff felt well again. A few days later, however, at about 4 o'clock in the morning, the plaintiff awoke in pain. Without knowing their nature she was having labor pains, and the child was born between 12 and 1 o'clock. According to the plaintiff's evidence, her husband telephoned the defendant physician about 9 o'clock in the morning to come and not until a fourth call informing him that a miscarriage had taken or was taking place on the toilet did the doctor arrive.

In discussing the question of damages, the court said that damages cannot be given for the mere fact of the miscarriage. The evidence indicated that it would have occurred anyway. Nor can they be given for the physical and mental suffering that the wife would have endured under the usual circumstances that would have accompanied the miscarriage. The plaintiff is entitled to recover, however, for any and all pains of childbirth and of the following bodily conditions that were not prevented or eased because of the negligent failure of the physician to attend or prescribe. "There may be a recovery for the increased physical and mental suffering the wife endures on account of the nonattendance of a physician. . . ." I Sutherland Damages 4th Edition, 352. If the defendant had been in attendance, the child would have been born in bed, narcotics or other medicines could have been prescribed to relieve the pains of the mother and other medical care of her taken. The mere assuring presence of the physician at such a time would have been a comfort to which the plaintiff might be found entitled. The defendant argues that the wife cannot have damages for grief over the manner in which the child was born or for anticipation of it, which anticipation did not exist. This is true, concluded the court, but she may recover for injured feelings attending the happening of the birth in the way that it did. Present mental suffering due to the immediate realization of what is occurring or has occurred that is not grief in retrospect is compensable.

The judgment in favor of the defendant physician was reversed and a new trial ordered.—*Mehigan v. Sheehan, 51 A. (2d) 632 (New Hampshire, 1947).*

Liability of Hospital for Injuries to Unattended Patient.—The plaintiff sued the defendant hospital for damages for injuries alleged to be due to the defendant's negligence in failing to provide him with the services of nurses, orderlies or other attendants commensurate with his known physical condition and needs. From a judgment in favor of the plaintiff the defendant appealed to the Supreme Court of Appeals of Virginia.

The plaintiff entered the defendant hospital as a pay patient for the purpose of having a cataract removed from his right eye. The day following his entry, the cataract was successfully removed and he was returned to his room in the hospital. The room to which the plaintiff had been assigned had no separate bath or toilet, and he had been instructed both by his physician and by the hospital attendants that when he desired to answer a call of nature he should ring for a nurse, who in turn would dispatch to him an orderly who would attend to his needs through the use of a bed pan in his room. He was cautioned that he should not attempt, without the assistance of an orderly, to get out of bed and attend to his needs in this respect. A few nights later, between 9 and 10 o'clock, the plaintiff felt the urge of an impending bowel movement. In accordance with the instructions previously given him, he signaled for a nurse by pressing the nearby electric button which illuminated a red signal light above the door. After waiting for a period of from ten to fifteen minutes, the plaintiff turned off the signal light and flashed it on again. No one came, however. In the meantime his discomfort and pain had become acute. To use his own words, "I felt that I would have an accident if I didn't do something." He therefore arose from the bed and procured the bed pan, which was on a chair in his room. The door leading from his room into the corridor was opened and people were passing back and forth; consequently he felt some embarrassment in undertaking to use the bedpan in the room. He walked toward what he thought was a washroom in the corner of his bedroom and opened the door, hoping that he might retire there and relieve himself, but found that it was too small for the intended use. He then closed the door of the washroom and turned away and, as he did so, his foot slipped and he fell, fracturing his hip.

The hospital contended that the evidence fell short of the legal requirements in two respects: (1) It failed to show that the defendant, or any of its employees, was guilty of negligence, and (2) it shows that the proximate cause of the plaintiff's injury was his own voluntary act in undertaking to attend to his own needs when he knew, or ought to have known, that he was in no condition to do so.

The degree of care exacted of a private hospital, conducted for profit, to their patients "is such reasonable care and attention for their safety as their mental and physical condition, if known, may require, and should be in proportion to the physical or mental ailments of the patient, rendering him unable to look after his own safety."

The troublesome question presented to us, continued the court, and that most seriously pressed, is whether the negligence of the hospital in failing to heed the plaintiff's call and in failing to attend to his needs was the remote cause, and his own act in getting out of bed and attempting to administer to himself was the direct and proximate cause of his fall and consequent injuries. An intervening cause, said the court, does not operate to exempt a defendant from liability if that cause is put into operation by the defendant's wrongful act or omission. Tested by this principle, the court continued, we think the jury was fully warranted in finding that the plaintiff's action in attempting to attend to his needs under the circumstances was not a superseding cause of his injury but was merely a circumstance in a continuous sequence of events—that is, a connecting link between the negligence of the hospital and his injury. The intervening act of the plaintiff was put into operation by the hospital's wrongful act or omission. His act was "a normal response to the stimulus" of the situation created by the hospital's negligent conduct. When the hospital attendants failed to respond to his call and administer to his needs, it was both natural and probable that he would undertake to relieve himself of the painful and embarrassing situation in which he had been placed by the primary act or omission of the hospital. Moreover, the hospital attendants knew, or should have known, that as a consequence of their neglect of his needs the plaintiff probably would undertake to get out of bed and wait on himself. Both the nurse and an orderly said that he had done so on other occasions. An intervening cause will not be deemed to have broken the causal connection if the intervening cause was foreseen or reasonably might have been foreseen by the wrongdoer. The plaintiff's conduct was involuntary. He was driven by pain and natural impulse to get relief by waiting on himself. His situation was akin to that in which a person put in peril by the negligent act of another, and in the instinctive effort to escape therefrom, suffers injury. In such a situation the negligent act is deemed the proximate cause of the injury. Accordingly the court affirmed the judgment of the trial court in favor of the plaintiff.—*Jefferson Hospital, Inc. v. Van Leer, 41 S. E. (2d) 441 (Va., 1947).*

Current Medical Literature

AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

American J. Digestive Diseases, Fort Wayne, Ind.

14:153-188 (May) 1947

The Obese Patient: Statistical Study and Analysis of Symptoms, Diagnosis and Metabolic Abnormalities. Sex Differences—Treatment. H. M. Ray.—p. 153.
Report of Case of Spontaneous Cholecystoduodenostomy. G. J. Culver and J. R. Kline.—p. 162.
*Diabetes Mellitus Complicated by Addison's Disease: Case Report, with a Review of the Literature. J. S. Devitt and J. C. Murphy.—p. 164.
New Hemostatic Agents in Proctology. A. J. Cantor.—p. 166.
*Azotemia in Gastrointestinal Hemorrhage. A. Schrumpf.—p. 169.
Creed for the Treatment of Diabetes. G. F. Anderson.—p. 170.

Diabetes Mellitus Complicated by Addison's Disease.—The physiologic antagonism between the secretions of the adrenal cortex and the islands of Langerhans, according to Devitt and Murphy is well known. It is emphasized by the almost universal hypersensitiveness to insulin observed in diabetic persons with Addison's disease It is paradoxical that diabetes should develop at all in the presence of adrenal cortex insufficiency. A survey of literature confirms that diabetes is the antecedent disease in all except 3 instances of both endocrine disturbances in the same patients. The normal antagonism between the adrenal cortex and the islands of Langerhans was well demonstrated in a woman aged 28 by the occurrence of reciprocal exacerbations of one disease associated with remissions of the other. The authors emphasize that sensitivity to insulin is less pronounced when desoxycorticosterone acetate is employed in the treatment of Addison's disease, and under the same circumstances the diabetes may be more severe.

Azotemia in Gastrointestinal Hemorrhage.—Schrumpf concludes that azotemia after massive hemorrhage in the upper gastrointestinal tract is not caused by one single factor. The chief factor is of dietetic origin, as the diet used is insufficient in protein and energy requirements. This again increases protein catabolism and waste of tissue. A second factor is the absorption of blood, which to a certain but moderate degree can play a part in the development of the initial azotemia. All other factors seem to be of little or no importance.

American Journal of Hygiene, Baltimore

45:259-404 (May) 1947

Control of Schistosomiasis Japonica. D. B. McMullen.—p. 259.
Studies on Filariasis: V. Serologic Relationships Between Antigenic Extracts of Four Nematodes. V. G. Warren.—p. 299.
*Immunity to Yellow Fever Five Years After Vaccination. C. R. Anderson and Augusta Gast-Galvis.—p. 302.
Typhus Fever in Italy, 1943-1945, and Control with Louse Powder. F. L. Soper, W. A. Davis, F. S. Markham and L. A. Riehl.—p. 305.
Typhus Fever in California, 1916-1945, Inclusive: Epidemiologic and Field Laboratory Study. M. Dorthy Beck and A. Van Allen.—p. 335.
Typhoid Vaccine Studies: XI. Effect and Effectiveness of Three 0.5 cc. Doses of TAB Vaccine. G. F. Luippold, D. Longfellow and M. Toporek.—p. 355.
Infestation of Man in Burma with Trombiculid Mites, with Special Reference to Trombicula Deliensis. H. S. Fuller.—p. 363.
Role of Antibody in Experimental Poliomyelitis. Isabel M. Morgan. —p. 372.

Immunity to Yellow Fever Five Years After Vaccination.—Anderson and Gast-Galvis report the results of studies recently made with 17 D yellow fever virus in a selected group of vaccinated persons in four Colombian towns. Their aim was to determine what changes had occurred in the immune status since vaccination and whether revaccination appeared advisable. Serums were obtained approximately five years after vaccination and revealed a high proportion of persons with neutralizing antibodies in all age groups. The percentage is comparable with that reported in studies of serums drawn a few months after vaccination. It is concluded, therefore, that neither children nor adults require revaccination five years after vaccination.

American Journal of Medical Sciences, Philadelphia

213:641-768 (June) 1947

Postexertional Orthostatic Hypotension. L. W. Eichna, S. M. Horvath and W. B. Bean.—p. 641.
Tyrosinase Inhibiting Action of Serum from Normal and Cancerous Patients. W. C. Stadie, M. Perlmutter and D. Robinson.—p. 655.
*Treatment of Syphilis of Central Nervous System with Penicillin. A. Heyman.—p. 661.
Oral Administration of Penicillin in Dogs. R. B. Stebbins, T. J. Macek and P. J. Daughenbaugh.—p. 671.
*Streptomycin in Treatment of Certain Gram-Negative Bacillus Infections of Central Nervous System. T. F. Paine, R. Murray, H. W. Harris and M. Finland, with technical assistance of Clare Wilcox.—p. 676.
Significance of Myeloid Maturation Curve in Material Aspirated from Sternal Bone Marrow. S. P. Lucia and Marjorie L. Hunt.—p. 686.
*Treatment of Pernicious Anemia with Synthetic L. Casei Factor. N. B. Kurnick, with technical assistance of Gertrude Lurinsky.—p. 694.
Renal Filtration Rates in Pregnancy Toxemia: Inulin and Exogenous Creatinine. L. D. Odell.—p. 709.
Plasma Angiotonase Concentration in Normal and Toxemic Pregnancies. E. W. Page.—p. 715.
Diagnosis of Generalized Amyloidosis by Congo Red Test: Definitive Diagnostic Criteria. I. J. Schkoff.—p. 719.
Sickle Cell Anemia: Recent Progress of Pediatric Interest. B. Dickstein and I. J. Wolman.—p. 728.
The Vagina. F. B. Block.—p. 737.

Penicillin in Syphilis of Central Nervous System.—Heyman utilized a dosage ranging from 1.2 to 6 million units of penicillin in the treatment of 141 patients, 83 men and 58 women, with syphilis of the central nervous system. The patients were followed for six to nineteen months. It is believed that dosages less than 4,000,000 units will prove to be unsatisfactory. The total dosage of 4,000,000 units may be used in doses of 50,000 units every three hours for eighty injections in ten days. Preliminary observations indicate that this dosage will probably produce an arrest of the neurosyphilitic process in 85 per cent of the cases. Pronounced subjective improvement was frequently noted. Patients with early neurosyphilis obtained a better response to penicillin than late cases. No correlation was observed between the changes in the blood serologic tests and the response of spinal fluid following penicillin. The cell count of the spinal fluid was found to be a sensitive index of treatment failure. Thirteen of the 141 patients were found to have evidence of spinal fluid relapse following treatment. Approximately half of the patients who obtained normal or satisfactory spinal fluid findings had had adequate chemotherapy previously, indicating that penicillin has a far greater effect than routine chemotherapy on syphilis of the central nervous system. Penicillin is recommended for the treatment of early neurosyphilis and late asymptomatic neurosyphilis provided adequate facilities are available for follow-up examinations of the spinal fluid. In late symptomatic neurosyphilis penicillin does not replace fever therapy as the treatment of choice.

Streptomycin in Gram-Negative Bacillus Infections of Central Nervous System.—Paine and his co-workers treated 1 boy aged 14 and a 16 day old infant with meningitis due to Pseudomonas aeruginosa, 1 infant aged 4 months with meningitis due to Bacillus proteus morgani, and 2 infants aged 8 and 11 months respectively with meningitis due to Hemophilus influenzae type b by administering streptomycin. The 14 year old boy received a total of 28 Gm. of the drug intramuscularly and 0.45 Gm. intrathecally. The 4 infants received from 4.4 to 11.6 Gm. by the intramuscular route and from 0.225 to 0.75 Gm. by the intrathecal or the intraventricular route. The transient untoward effects of local use of streptomycin in 3 of the patients would indicate that the intraventricular and intrathecal routes should be used with caution. A prompt clinical and bacteriologic response occurred in 2 patients in whom penicillin and sulfonamide drugs proved ineffective, and in 1 patient in whom no other medications were used. A gradual response to streptomycin occurred in 1 patient in whom penicillin therapy was ineffective. In 1 of the patients with meningitis due to Hemophilus influenzae the institution of streptomycin may have affected a resolution of the disease process. Recovery occurred in all 5 cases. Streptomycin would seem to be the drug of choice in the treatment of meningitis due to these gram-negative bacilli.

Synthetic Lactobacillus Casei Factor in Pernicious Anemia.—Seven patients with pernicious anemia—4 women between the ages of 59 and 76 and 3 men between 64 and 70—were treated by Kurnick with synthetic Lactobacillus casei factor in doses of from 2.5 to 30 mg. daily by mouth. All patients gave a complete hematologic response, including reticulocyte count, red cell count, white cell count and platelet count, and correction of the megaloblastic dysplasia of the bone marrow. Reticulocytosis began between the fourth and seventh days and reached a peak two to four days later. Subjective improvement, most strikingly evidenced by greatly improved appetite, occurred usually on the third or fourth day of treatment. Glossitis and other gastrointestinal symptoms subsided within one week, and regeneration of papillae became apparent at this time. The minimal oral therapeutic dose for maximal response is 2.5 mg. or less daily. Combined sclerosis of the spinal cord is somewhat improved by folic acid therapy. The results are similar to those with liver. It is suggested that the Lactobacillus casei factor is either the anti-pernicious anemia factor or is utilized in its synthesis. Other compounds in liver with similar structures but without activity for L. casei may also be utilized by the human organism.

American Journal of Surgey, New York

73:635-734 (June) 1947

Experiences of an Army Doctor in European Theater of War. E. C. Cutler.—p. 637.
Streptomycin. E. J. Pulaski.—p. 651.
Crossed Ectopia with Fusion: Review of Literature and Report of 4 Cases. B. S. Abeshouse.—p. 658.
*Improved Grafting Technic for Burns of Extremity. W. B. Macomber and H. S. Patton.—p. 684.
Mercury—Its Role in Intestinal Decompression Tubes. M. O. Cantor.—p. 690.
Early Diagnosis in Radical Resection of Carcinoma of Lower Esophagus. I. D. Puppel.—p. 695.
*Graft Fixation Beneath Tubed Pedicle Flaps. G. B. Sanders and R. B. Lynn.—p. 700.

Improved Grafting Technic for Burns of Extremity.—Macomber and Patton present a grafting procedure which is especially advantageous in large single plaque burns of the extremities. It affords as advantages an ideal recipient site, the absence of infected, scar forming granulations beneath the grafts, minimal postoperative dressings, a shorter healing period and a softer, more pliable and durable graft.

Graft Fixation Beneath Tubed Pedicle Graft.—Sanders and Lynn call attention to the difficulties of applying adequate pressure dressings to split skin grafts on the donor areas beneath tubed pedicle flaps. They describe a satisfactory and efficient pressure dressing of the stent type which has resulted in complete takes of grafts beneath tubed pedicle flaps in 8 consecutive cases. This type of dressing has three advantages: 1. It provides firm fixation, immobilization and sufficient pressure on the graft. 2. It ensures protection and immobilization of the tube. 3. Cutting of the superficial gauze dressing makes the tube easily accessible for frequent inspection without disturbing the stent dressing on the graft. The stent dressing is left undisturbed for six or seven days, at the end of which time the sutures holding the stent in place are cut and likewise the sutures in the graft itself are cut and removed. It is important to leave the end-on mattress sutures in place for an additional four or five days. If this is not done, the area of the donor site will reexpand, pulling away from the edges of the graft, leaving a circumferential raw area between the graft and the skin edge.

American Practitioner, Philadelphia

1:517-574 (June) 1947

Trends in Immunization of Children. E. H. Watson.—p. 517.
Diagnosis and Treatment of Tachycardias. E. A. Brethauer Jr.—p. 522.
Headache: Common Etiologic Types and Methods of Therapy. L. S. Blumenthal.—p. 527.
Review of Rh Factor and Its Clinical Significance. J. L. Switzer.—p. 532.
New Knowledge in Treatment of Malaria. H. Packer.—p. 535.
Functional Derangement of Digestion. W. T. Gibb Jr.—p. 542.
Challenge of Alcoholism. F. G. Ebaugh and K. D. Heuser.—p. 549.

Anesthesiology, New York

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Use of New Curarizing Agent, Dihydro-Beta-Erythroidine, for Production of Muscular Relaxation During Anesthesia and Surgery. R. D. Dripps and W. F. Sergent.—p. 241.
Curare and Curare-like Compounds: Review. B. H. Robbins and J. S. Lundy.—p. 252.
Attempt to Prolong Sympathetic Block with Bromsalizol in Polyethylene Glycol. M. H. Harmel, L. D. Vandam and A. Lamont.—p. 266.
Intraspinal Segmental Anesthesia: A Preliminary Report. M. Saklad, C. S. Dwyer, S. Kronenberg, E. Neves and M. Sorkin.—p. 270.

Archives of Neurology and Psychiatry, Chicago

57:521-660 (May) 1947

*Relation Between Electroencephalographic and Histologic Changes Following the Application of Graded Force to the Cortex. F. T. Zimmerman and T. J. Putnam.—p. 521.
Malignant Chordoma of the Lumbar Region: Report of Case with Autopsy; Comment on Unusual Metastases to Brain, Lungs, Pancreas, Sacrum and Axillary and Iliac Lymph Nodes. A. A. Morris and R. Rabinovitch.—p. 547.
*Histopathologic Changes Associated with Human Poliomyelitis. M. Scheinker.—p. 565.
Physiology of Botulinus Toxin. A. C. Guyton and M. A. MacDonald.—p. 578.
*Meningeal Gliomatosis: Study of 42 Cases. F. E. Polmeteer and J. W. Kernohan.—p. 593.
Educability of a "Deteriorated" Epileptic Patient. Doris Twitchell-Allen.—p. 617.

Electroencephalographic and Histologic Changes Following Application of Graded Force.—Zimmerman and Putnam introduce a new method for the study of cortical cell change in connection with electroencephalographic deviations. The experiments were made on cats, and traumatizing activity was recorded in terms of voltage (intensity of force) and the duration of the force applied. The experiments were designed to investigate the possible relationship between the electroencephalographic patterns and the histopathologic changes occurring simultaneously after the application of graded force to the cortex. It was found that electroencephalographic changes vary with the amount of cortical cell damage within a certain critical range. Below this critical range cortical cell change occurs without corresponding electroencephalographic deviations. Within the critical range the amount of electrical and cortical cell change is directly proportional to the amount of force applied to the cortex. Localized cortical cell damage produces localized electroencephalographic changes. Histologic changes assume a definite pattern of stratification, according to the amount of force applied to the cortex. Electroencephalographic changes vary with the amount of force applied to the cortex. Reduction in amplitude is directly proportional to the amount of force delivered. The appearance of slow waves is inversely proportional to the amount of force applied to the cortex. Unilateral convulsive electrical patterns were produced by the mechanical application of force to the cortex.

Histopathologic Changes in Poliomyelitis.—Scheinker thinks that these histopathologic aspects of human poliomyeliti remain controversial: (1) the localization of the disease an its distribution; (2) the primary type of the essential lesions (3) the correlation of the neuronal damage and the meso dermalglia alterations, and (4) the role played by the microglia He reviews some of the conflicting views and presents detaile studies on 6 cases of acute anterior poliomyelitis. Wherea until recently acute anterior poliomyelitis was regarded b clinicians and pathologists as a disease of the anterior horn of the spinal cord, the present study demonstrates that n part of the central nervous system entirely escapes damage The medulla, pons, midbrain, hypothalamus and cerebellum were involved to a great extent in every case. There was no direct correlation between the degenerative neuronal changes and the inflammatory reaction, so that they may be independent phenomena. Both diffuse and focal proliferations of microglia cells were noted as predominant tissue reactions in all cases. The pronounced concentration of the inflammatory and degenerative tissue reactions in the region of the vagal nuclei provides additional suggestive evidence of the possible spread of the virus from the intestine into the central nervous system by way of the afferent and efferent pathways of the vagus nerve.

Meningeal Gliomatosis.—Polmeteer and Kernohan say that in a survey of the glioma group of neoplasms observed at the Mayo Clinic from 1922 to 1942 generalized meningeal gliomatosis was found in 42 instances. The medulloblastoma was responsible for generalized metastases in 47.6 per cent of the cases. Glioblastoma multiforme represented 14.3 per cent of the series, ependymoma and ependymoblastoma 11.9 per cent, oligodendroglioma and oligodendroblastoma 11.9 per cent, astrocytoma 7.1 per cent, retinoblastoma 4.8 per cent and pinealoma 2.4 per cent. Although several instances of extracranial metastasis from gliomas have been reported, in this series the metastatic implants were limited to the central nervous system. The metastatic growths were more or less confined to the subarachnoid space. The pia mater and the subarachnoid space, which are extremely vascular, furnish a suitable environment for the nutrition and the survival of the cells of the tumor. The extension of the cells is limited peripherally by the fibrous, inelastic and avascular dura mater and arachnoid membrane and centrally by the compact structures of the brain and spinal cord. In the majority of cases the cells of the metastatic tissue were easier to identify than those of the primary tumors, probably because they grew on a free surface and the morphologic characteristics of these cells were unaltered by the pressure of the adjacent cerebral and spinal structures. Contrary to the general belief that only the more malignant varieties of glioma produce generalized meningeal gliomatosis, the authors found that this process may result from almost any variety of glioma.

California Medicine, San Francisco

66:331-420 (June) 1947

Roentgenology in Chronic Mastoiditis. H. A. Fletcher and F. Windholz. —p. 331.

*Subacute Generalized Neuromuscular Exhaustion Syndrome—Report of 3 Cases. J. M. Nielsen.—p. 338.

Present Status of Surgery in Congenital Heart Disease. J. C. Jones. —p. 341.

*Evaluation of Topical Penicillin Therapy: Review of Recent Literature. T. H. Sternberg and P. LeVan.—p. 344.

Treatment of Interstitial Cystitis. R. W. Barnes.—p. 347.

Cutaneous Reactions to Penicillin. B. A. Newman.—p. 349.

Estrogen Treatment of Chronic Urethritis in the Female. F. S. Howard. —p. 352.

Present Day Treatment of Asthma. M. C. Harris.—p. 354.

Fracture of Olecranon Process Due to Muscle Pull with Forearm in Hyperextension. A. Waxman and H. Geshelin.—p. 358.

*Neurologic Complications to Treatment with Rabies Vaccine. F. H. Redewill Jr. and L. J. Underwood.—p. 360.

Cancer Problem. D. A. Wood and M. B. Shimkin.—p. 364.

Subacute Generalized Neuromuscular Exhaustion.—The syndrome presented by Nielsen develops subacutely after severe overexertion which itself occurs during a period of euphoria. The patient suddenly becomes aware of utter exhaustion approaching paralysis of the entire body but most intensely in muscles which have been abused. There are severe pain and tenderness in all muscles, also a simultaneous restlessness which makes it difficult for the patient to rest or to relax. Fascicular twitching appears in the muscles and rapid atrophy ensues. During the acute stage the muscles are flaccid and deep reflexes absent; later the reflexes are normal. After a recovery period of several months the patient is able to be up and do moderate work, but he never recovers his former endurance. The author is probably the first to describe this syndrome. He reported 1 case in 1940 and 2 others in 1944. March described a typical case in 1943. The author describes 2 cases observed since the last report and 1 other case not correctly recognized eighteen years ago. The first patient presented here was a youth aged 16 who had done exercises demanding extreme exertion for three months, less for another four months. This was followed by sudden appearance of muscular tenderness, "jerking" of muscles, atrophy of upper limbs and of legs; extreme weakness approaching paralysis. The second patient was an arteriosclerotic man aged 61 who had hauled and lifted 539 cans of milk weighing 128 pounds each in three days. This exertion was followed by complete exhaustion, with loss of 27 pounds in six weeks in spite of rest. The third patient was dean of a university who worked fifteen to eighteen hours daily for ten years. He reached so low a level of endurance that walking two city blocks was sufficient to put him to bed for three weeks.

Topical Penicillin Therapy.—Sternberg and LeVan maintain that penicillin ointment is of value in a limited number of dermatoses ordinarily caused by penicillin-sensitive bacteria, such as impetigo, the ecthyma-pyoderma group, sycosis vulgaris and the infectious dermatitides. Inconsistencies in response to treatment occur, probably because of penicillin-resistant strains of streptococci and staphylococci and improper local use of the drug. The overall results of topical penicillin therapy of the bacterial infections of the skin are good, but comparable results have been obtained with other chemotherapeutic agents, although more time may be required. An appreciable number of persons are initially sensitive to penicillin. Studies have shown that a large but as yet undetermined percentage of people become sensitized to penicillin following local contact with the drug. Because of the increasing incidence of reactions concomitant with the present widespread use of penicillin, it seems likely that its topical use will eventually be limited to bacterial infections of the skin unresponsive to other therapeutic agents.

Neurologic Complications of Treatment with Rabies Vaccine.—Redewill and Underwood studied the files of the Los Angeles County Hospital for cases of rabies treatment reaction admitted over the last five years. The 5 cases reviewed presented mainly a neurologic clinical pattern and were true examples of complications due entirely to treatment with rabies vaccine. Recovery occurred in all 5 cases. One of the conditions most commonly confused with the neurologic reaction to rabies vaccine was anterior poliomyelitis. The onset a short time after initiating Pasteur treatment forms the main differential feature favoring the diagnosis given in these cases. Rabies itself, sometimes feared to be present at the onset, is ruled out principally by the clinical course; also the incubation period in cases complicating rabies vaccine treatment is usually between ten and seventeen days, that of rabies three to eight weeks. Complications may develop in persons never bitten by a rabid animal or exposed to rabies but who have merely been given Pasteur treatment. Many believe the reactions to be the result of anaphylactic or allergic action. The greatest number of accidents occurs with large doses of fresh virus, the lowest with the carbolized virus vaccines. It is possible that the fixed virus is the etiologic agent. The clinical entities included encephalitis alone and encephalitis with spinal involvement as well as pure spinal cord manifestations. Treatment was chiefly symptomatic. The incidence of complications does not warrant the withholding of the Pasteur treatment when indicated. The treatment is best suspended with the occurrence of neurologic symptoms.

Journal of Bacteriology, Baltimore

53:509-672 (May) 1947. Partial Index

A Study with High Voltage Electron Microscope of the Endospore and Life Cycle of Bacillus Mycoides. G. Knaysi, R. F. Baker and J. Hillier.—p. 525.

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Inactivation of the V Factor by Erythrocytes and the V-Sparing Property of Nicotinamide. E. P. Casman.—p. 561.

*Penicillin Production by a Thermophilic Fungus. L. J. Rode, J. W. Foster and V. T. Schuhardt.—p. 565.

Studies on Streptomycin: I. Factors Influencing the Activity of Streptomycin. S. Berkman, R. J. Henry and R. D. Housewright.—p. 567.

Effect of Streptococcus Pyogenes Extracts and Filtrates on Various Bacteria. L. G. Nutini, T. A. Kelly and Margaret Ann McDowell. —p. 575.

Relation of Protein Binding to Pharmacology and Antibacterial Activity of Penicillins X, G, Dihydro F and K. R. Tompsett, Selma Schultz and W. McDermott.—p. 581.

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Spore Wall Demonstrated with the Electron Microscope. C. A. Evans and N. R. Underdahl.—p. 647.

Isolation and Distribution in Florida of an Anaerogenic Paracolon, Type 29911. Mildred M. Galton, Mary E. Hess and Patricia Collins. —p. 649.

Isolation of a Strain of Escherichia Coli Pathogenic for the Rabbit's Eye from a Patient with Diarrhea. I. Ruchman and K. Dodd.—p. 653.

Cytochemical Mechanisms of Penicillin Action: I. Oxidation Reduction Levels. J. Dufrenoy and R. Pratt.—p. 657.

Penicillin Production by a Thermophilic Fungus.—Rode and his associates say that a program for obtaining antibiotics from thermophilic organisms active against Brucella abortus is under way at the Brucellosis Research Laboratory at the University of Texas. Several fungi, actinomycetes and bacteria, all growing well at 52 C. and forming substances inhibitory to Brucella as well as to many other common test bacteria, have been isolated in pure culture from composted manure One of the fungus cultures is unique in that it produces penicillin at 52 C. and is a new species member of the group of penicillin-producing fungi. Heretofore the highest temperature for penicillin formation has been 37 C. The organism has been identified tentatively as Malbranchea pulchella. Of several mediums tests, corn steep liquor medium has given the highest antibacterial activity.

Journal of Experimental Medicine, New York

85:559-800 (June) 1947

Influence of Anesthesia on Experimental Neurotropic Virus Infections: In Vitro Studies with Viruses of Western and Eastern Equine Encephalomyelitis, St. Louis Encephalitis, Poliomyelitis (Lansing) and Rabies S E Sulkin and Christine Zarafonetis.—p. 559.

Histologic and Serologic Sequences in Experimental Hypersensitivity. C van Z. Hawn and C. A. Janeway.—p. 571.

Study of Inhibition of Streptococcal Proteinase by Serums of Normal and Immune Animals and of Patients Infected with Group A Hemolytic Streptococci. E. W. Todd.—p. 591.

Mode of Action of Streptomycin on Type b Hemophilus Influenzae: Nature of Resistant Variants. H. E. Alexander and G. Leidy.—p. 607.

Modifying Effects of Certain Substances of Bacterial Origin on the Course of Infection with Pneumonia Virus of Mice. F. L. Horsfall Jr. and M. McCarty.—p. 623.

Multiplication and Spread of the Virus of St. Louis Encephalitis in Mice, with Special Reference to Its Fate in the Alimentary Tract. J L. Peck Jr. and A. B. Sabin.—p. 647.

Relation to Course of Avian Malaria of Biotin and a Fat Soluble Material Having the Biologic Activities of Biotin. W. Trager.—p. 663.

Immunochemical Studies on Blood Groups: Preparation of Blood Group A Substances from Human Sources and a Comparison of Chemical and Immunochemical Properties with Those of Blood Group A Substance from Hog Stomach. E. A. Kabat, A. Bendich, Ada E. Bezer and S M Beiser.—p. 685.

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Transmission of Virus of Lymphocytic Choriomeningitis by Trichinella Spiralis. J. T. Syverton, O. R. McCoy and J. Koomen Jr.—p. 759.

Chemical Studies on Host-Virus Interactions: Tryptophan Requirements in the Stages of Virus Multiplication in the Escherichia Coli-T2 Bacteriophage System. S. S. Cohen and Catherine B. Fowler.—p. 771.

Journal of Immunology, Baltimore

56:97-194 (June) 1947

Neutralization of Western Equine Encephalomyelitis Virus by Human Convalescent Serum: Influence of Heat Labile Substances in Serum on Neutralization Index. L. Whitman.—p. 97.

Studies on Immunization of Swine Against Infection with the Swine Influenza Virus: I. Resistance Following Subcutaneous Administration of Formolized Purified Influenza Virus. I. W. McLean Jr., Dorothy Beard and J. W. Beard.—p. 109.

Mechanism Responsible for Lowered Resistance of Hypophysectomized Rats to T. Lewisi. N. Molomut.—p. 139.

Factors Influencing Production of Tetanal Toxin. J. H. Mueller and Pauline A. Miller.—p. 143.

*Purification and Concentration of Influenza Virus by Means of Alcohol Precipitation. H. R. Cox, J. van der Scheer, S. Aiston and E. Bohnel. —p. 149.

Factors Influencing Red Cell Agglutination-Inhibitive Reaction in Influenza and Application to Diagnostic Test. L. Whitman.—p. 167.

Effect of Temperature and Serum on Detoxification of Staphylococcal Toxin by Interfacial Adsorption. J. M. Johlin.—p. 179.

Biophysical Studies of Blood Plasma Proteins: VI. Immunologic Properties of γ_1-Globulin from Plasma of Normal Humans. H. F. Deutsch, R. A. Alberty, L. J. Gosting and J. W. Williams.—p. 183.

Alcohol Precipitation in Purification and Concentration of Influenza Virus.—Cox and his associates think that the widespread use of the chick embryo for the cultivation of viruses and the increased use of antigenic materials from this source for human vaccination make it desirable that influenza virus obtained from chick embryos be highly refined in order to eliminate or reduce the possibilities of sensitizing human beings to chick embryo proteins. The authors report experiments in which ethyl and methyl alcohol were used to concentrate and partially purify the PR-8 Weiss and Lee strains of influenza virus under carefully controlled conditions of alcohol concentration, temperature and p_H. Of the two, methanol was found to be superior, since the optimal concentration is of broader range, and less denaturation of viral protein is encountered than with ethanol. The data indicate that methanol precipitation under controlled conditions produces no virus denaturation nor loss of activity as judged by chicken cell agglutinating activity, infectivity titers in chick embryos or immunizing potency of killed vaccines for mice. On the contrary, based on the chicken cell agglutinating activity of the starting material, yields of virus equal to or exceeding 100 per cent are obtained. The methanol precipitation method is readily applicable to the concentration and purification of influenza virus using either the bucket, angle head or Sharples continuous flow types of centrifuges. The method is particularly valuable for producing vaccines on a large scale. The method may have application in the concentration and purification of other viral and rickettsial agents.

Journal-Lancet, Minneapolis

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Communitywide Chest X-Ray Surveys and the General Practitioner. H. E. Hilleboe.—p. 225.

Modern Methods of Diagnosis in Pulmonary Tuberculosis. S. S. Cohen. —p. 229.

Guide for Disposition of Persons with Abnormal Pulmonary Findings on X-Ray Films. H. E. Hilleboe and J. Holm.—p. 234.

Importance of the Isolation and Identification of Tubercle Bacilli. W. H. Feldman and A. G. Karlson.—p. 239.

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Value of Chest X-Ray Survey in the Diagnosis of Cardiovascular Disease. G. N. Aagaard.—p. 248.

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Fifteen Years of Tuberculosis Control at the University of Pennsylvania. H. D. Lees.—p. 255.

Journal of Neurophysiology, Springfield, Ill.

10:167-246 (May) 1947

Further Localization and Analysis of Adrenergic Synaptic Inhibition. A. S. Marrazzi and Rose N. Marrazzi.—p. 167.

Effect of Parasympathetic Drugs on the Conditioned Response. W. H. Funderburk and T. J. Case.—p. 179.

Acetylcholine and Neuromuscular Transmission. Marianne Fillenz and Mary Hanafin.—p. 189.

Acetylcholine and Synaptic Transmission in Spinal Cord. J. C. Eccles. —p. 197.

Differential Spinal Block: The Block of Cutaneous and Stretch Reflexes in Presence of Unimpaired Position Sense. S. J. Sarnoff and Julia G. Arrowood.—p. 205.

Viscosity Changes in Axoplasm Under Stimulation. J. V. Flaig.—p. 211.

Electrical Activity in Frog Spinal Cord. J. Cate, W. G. Walter and L. J. Koopman.—p. 223.

Inhibition of Cholinesterase by Di-Isopropyl Fluorophosphate, Physostigmine and Hexaethyl Tetraphosphate in the Roach. L. E. Chadwick and D. L. Hill.—p. 235.

Journal of Nutrition, Philadelphia

33:601-724 (June) 1947

Metabolism of Women During the Reproductive Cycle. Bertha Munks, Mildred Kaucher, Elsie Z. Moyer, Mary Ellen Harris and Icie G. Macy.—p. 601.

Blood Levels and Absorption of Vitamin A in Children with Keratosis Follicularis. R. F. Krause and H. B. Pierce.—p. 633.

*Effect of Fat Level of Diet on General Nutrition: III. Weight Loss, Mortality and Recovery in Young Adult Rats Maintained on Restricted Calories. B. T. Scheer, J. F. Codie and H. J. Deuel Jr.—p. 641.

Nutritional Surveys in Western Holland: Rotterdam, 1945. C. E. French and F. J. Stare.—p. 649.

Influence of Autoclaving Soybean Oil Meal on Digestibility of Proteins. R. J. Evans, J. McGinnis and J. L. St. John.—p. 661.

Nutritive Value of Keratin: III. Effect of Source, Particle Size and Method of Grinding. G. W. Newell and C. A. Elvehjem.—p. 673.

Study of Relation Between Protein Efficiency and Gain in Weight on Diets of Constant Protein Content. D. M. Hegsted and Jane Worcester.—p. 685.

Reproduction and Lactation in Highly Inbred Strains of Mice on Synthetic Diets. P. F. Fenton and G. R. Cowgill.—p. 703.

Effect of Fat Level of Diet on General Nutrition.—Scheer and his associates found that, when young adult rats are subjected to severe caloric restriction on diets varying in fat content, weight loss is less rapid and mortality is less on diets containing liberal amounts of fat than on a fat free diet. During recovery from the period of caloric restriction, weight loss is more rapidly regained, and reproductive capacity is superior on diets containing fat. This is one of a series of studies on the importance of fat in the diet. In every instance animals performed more satisfactorily when fed diets containing liberal amounts of fat than when fed diets containing little or no fat. The observation of Forbes and his associates that the metabolic efficiency of food utilization is greater when fat is present suggests one important possible explanation. It does not seem that all the effects which have been observed on physical capacity, resistance to undernutrition, reproduction and lactation can be the result simply of increased efficiency of food utilization. It appears that fat must take an active part in a variety of fundamental vital processes.

Journal of Urology, Baltimore

57:949-1232 (June) 1947. Partial Index

Studies in Urolithiasis: I. Composition of Urinary Calculi. E. L. Prien. —p. 949.
Experimental Production of Kidney Stones with Urea Splitting Organisms. H. I. Suby and Robina M. Suby.—p. 995.
Massive Calcinosis with Chronic Renal Insufficiency Due to Polycystic Kidneys: Case Report. T. M. Burkholder and R. R. Braund. —p. 1001.
Experiences with Tantalum Tubes in Reimplantation of Ureters into Sigmoid in Dogs and Humans. S. Lubash p. 1010.
Epithelium of Vaginal Type in Female Trigone Clinical Problem of Trigonitis. L. Cifuentes.—p. 1028.
Irradiation Reactions in Bladder: Occurrence and Clinical Course Following Use of X-Ray and Radium in Treatment of Female Pelvic Disease. E. M. Watson, C. C. Herger and H. R. Sauer.—p. 1038.
Information Derived from X-Ray Examination of Neck of Bladder and of Prostatic Urethra. A. Pereira.—p. 1054
*Stress Incontinence. E. Hock.—p. 1069.
Treatment of Paraplegic: Observations in Series of 101 Cases. G. J. Thompson, M. H. Nourse and H. C. Bumpus p. 1085.
*Spinal Cord Injuries: Calculi of Urinary Tract. G. C. Prather. —p. 1097.
Revised Perineal Prostatectomy: Extraurethral and Extravesical Procedure. A. E. Goldstein.—p. 1145.
Follow Through on 100 Cases of Cancer of Prostate. J. A. Seaman, A. J. Connelly and N. Egnatz.—p. 1158.
Repair of Rectourethral Fistulas. L. G. Lewis p. 1173.
Repair of Inguinal Hernia Based on an Urologic Relationship to Undescended Testicle. J. R. Dillon.—p. 1194
Tumors of the Testis: Report of 922 Cases. N. B. Friedman and R. A. Moore.—p. 1199.
Effect of Presacral Neurectomy on Fertility of Man and Animals. R. E. Van Duzen, D. Slaughter and B. White.—p. 1206

Stress Incontinence.—According to Hock the causes and mechanism of stress incontinence in women are still poorly understood. Urinary continence is achieved by the sum total of all factors increasing the urethral resistance. Urinary incontinence develops if the sum total of these factors is decreased so that the urethral resistance is insufficient to withstand a sudden increase of the intravesical pressure. Reflex relaxation of the urethra is often a major factor in the causation of incontinence. If the relaxation is due to mechanical injury of the sphincters or supportive structures of the urethra, one of the accepted incontinence operations is indicated. If a reflex from some pelvic organ is responsible, correction of the disease will cure the incontinence. A frequent cause seems to be chronic inflammation of the urethral glands. In most cases a combination of several factors is at work. Usually there is some mechanical relaxation of the urethra which in itself is insufficient to produce incontinence. If reflex urethral relaxation is added, the combination of the two may lead to incontinence, and then clinical cure will follow the elimination of only one factor. If in the individual case it is impossible to determine whether incontinence is due more to mechanical or to reflex relaxation of the urethra, it is advisable to begin with the less risky treatment of the urethritis, which consists in urethral dilations and fulguration, the latter being especially effective. Twenty cases of stress incontinence in women and 2 cases of a similar condition in men are presented.

Urinary Calculi in Spinal Cord Injuries.—Prather is convinced that calculus disease in combination with renal infection is the most serious threat to those who have sustained injury of the spinal cord. His observations on this problem were made on over 60 patients with injury of the spinal cord in an army general hospital in this country. Intravenous urography was employed as soon as possible after admission as a part of the routine study, and the urograms were repeated at intervals of six to eight weeks, or more often if a febrile episode arose. Over a period averaging fifteen months from time of injury the author found an incidence of 31.5 per cent of renal calculi in patients with complete transection of the spinal cord and an incidence of 20 per cent in those with partial transection. Bladder calculi also were common. Of the patients with complete transection 30 per cent either had bladder calculi at the time of admission or developed them during hospitalization. Only 14 per cent of those with partial transection were found to have bladder calculi. These findings may be explained by the longer period of bladder drainage which was commonly necessary in patients with complete transection of the spinal cord. Formation of bladder calculi occurred irrespective of suprapubic or urethral catheter drainage, irrespective of tidal (automatic) or a manually controlled irrigation, and during the use of solution M as the sole irrigating medium. In most instances the calculi were small and could be removed with the cystoscopic lithotrite and with the aid of the Ellik evacuator and resectoscope sheath. Analysis showed that the stones from the kidney and the bladder were principally calcium phosphate and calcium carbonate. In the absence of a generally effective prophylaxis of calculus formation, surgical treatment frequently is necessary.

Laryngoscope, St. Louis

57:305-366 (May) 1947

One Stage Resection of Total Cervical Esophagus, Larynx, Base of Tongue, Hypopharynx, Cervical Trachea and Bilateral Cervical Lymph Node Chains for Carcinoma Primary in the Cervical Esophagus: Reconstruction of Cervical Esophagus. A. Brunschwig and E. Camp. —p. 305.
Anomalies of Internal Carotid Artery and Its Branches: Embryologic and Comparative Anatomic Significance. Report of New Case of Persistent Stapedial Artery in Man. F. Altmann.—p. 313.
Surgery of Frontal Sinus. H. M. Goodyear.—p. 340.
Use of 2.5 Per Cent Sulfathiazole in Propylene Glycol for Respiratory Infections. B. N. Craver and F. F. Yonkman.—p. 354.
*Hearing Aid for the Relief of Tinnitus Aurium. M. Saltzman and M. S. Ersner.—p. 358.

Hearing Aid for Relief of Tinnitus Aurium.—Saltzman and Ersner state that the fenestration operation will restore hearing and afford relief from tinnitus in a large percentage of cases of otosclerosis. This surgical procedure makes a path for extraceptive sound to reach the inner ear and by doing so the patient's intrinsic tinnitus either is subdued or becomes tolerable. The benefits obtained from a hearing aid are analogous to those of the fenestration operation. By amplification, much outside sound is enabled to reach the cochlea, crowding out and masking the patient's head noises. It was in the routine fitting of hearing aids that the authors discovered the therapeutic advantages in regard to tinnitus. They found it most efficacious in otosclerosis for those patients who are not suitable for the fenestration operation or are unwilling to undergo it. In nerve deafness, if no extraordinary tolerance difficulties are present, a hearing aid will afford considerable relief from head noises simultaneously with improvement in hearing. A hearing aid is helpful also in the tinnitus associated with chronic adhesive otitis media.

New England Journal of Medicine, Boston

236:885-920 (June 12) 1947

Surgery of Cancer. C. Huggins.—p. 885.
*Observations on a Family Epidemic of Infectious Hepatitis. H. G Kunkel and C. L. Hoagland.—p. 891.
*Massive Gastrointestinal Bleeding Following Exposure to Low Pressure. W. W. Schier.—p. 898.
Pediatrics. Members of Staffs of the Children's and Infants' Hospitals —p. 901.
Periarthritis Nodosa Involving Gallbladder and Liver: Infarcts of Gallbladder.—p. 909.
Wilm's Tumor of Kidney.—p. 915.

236:921-964 (June 19) 1947

Medical Care in Our Free Society. L. S. McKittrick.—p. 921.
Thrombophlebitis—Problem of Treatment. H. L. Albright.—p. 928.
Effect of Restricted Intake of Carotene and Vitamin A on Psoriasis Vulgaris. Preliminary Report. R. Hoffmann, E. J. Lorenzen and Arlene S. Garfinkel.—p. 933.
Time of Election for Abdominal Surgery in Childhood. E. J. Donovan. —p. 937.
Allergic Manifestations After Injection Treatment of Varicose Veins. Eliza A. Melkon and Dorothy K. Scheidell.—p. 940.
Rubella (German Measles). C. Wesselhoeft.—p. 943.
Cavernous Hemangioma of Right Middle Lobe of Lung.—p. 951.
Leiomyoma of Esophagus.—p. 955.

Family Epidemic of Infectious Hepatitis.—An epidemic of infectious hepatitis occurring in 9 of 10 children in a single family was followed by Kunkel and Hoagland for five months in New York. The children ranged in age from 3 to 20. Contact was found to be the probable mode of spread. Determinations of sulfobromophthalein retention and thymol reactivity of the serum proved to be valuable aids in the detection of nonicteric cases. The thymol turbidity test, because of its prolonged elevation, was of special value in an epidemiologic study. Spider angiomas, which developed during the acute attack, were found in 5 cases. This physical sign was characterized by sudden onset and delayed disappearance. It proved to be helpful in corroborating the diagnosis in 2 cases. Six children did not develop clinical evidence of jaundice. The severity of the illness and the presence of jaundice showed a definite relation to the age of the children, the disease being milder in the younger group.

Massive Gastrointestinal Bleeding Following Exposure to Low Pressure.—A medical officer aged 29 was admitted to a station hospital because of bloody diarrhea of two days' duration. Two days before admission the patient had been exposed to a simulated altitude of 41,000 feet while demonstrating some of the phenomena of high altitude physiology. During the reduction in pressure he had crampy abdominal pain with distention. This was mild at first but increased during the ten minutes at that pressure. The pressure was then increased to 2¾ pounds per square inch—equivalent to an altitude of 39,000 feet. This was maintained for half an hour. The abdominal pain was not disabling but was uncomfortable. It disappeared during the increase in pressure. He ate supper and went to bed early. About four hours after retiring he was awakened with crampy abdominal pains that were generalized and associated with a desire to evacuate. A large bloody diarrhea containing dark clots ensued. Three hours later similar rectal bleeding occurred. The next day the patient felt well and went about his daily duties. Three more tarry stools in the next twenty-four hours brought him to the hospital. On the fifth hospital day the stools became normal. Schier discusses the differential diagnosis and possible etiologic factors, namely shock, acute dilatation and air embolism of the bowel and increased capillary permeability associated with an allergic diathesis. Other possible sources of bleeding of an obscure nature are discussed, including Meckel's diverticulum and new growths of the small intestine. Treatment is symptomatic, with early transfusion. Surgery is indicated when the source of the bleeding is definite and the lesion is remediable by surgery or when severe recurrent hemorrhages of unknown nature leave surgery as the only resort.

New Orleans Medical and Surgical Journal

99:599-662 (June) 1947

Evaluation of Estrogen Therapy. R. A. Kimbrough and S. L. Israel. —p. 599.
Crush Syndrome in Obstetrics. M. Suter and F. Brumfield.—p. 605.
Reverse Trendelenburg Position and Early Mobilization After Operation. E. Mendelssohn.—p. 608.
*Homologous Serum Hepatitis: Clinical Implications. L. Schiff.—p. 611.
*Echinococcus Infection (Hydatid Disease) in Louisiana. J. C. Swartzwelder.—p. 617.
Part of General Practitioner in Management of Vesical Neck Obstruction. F. E. B. Foley.—p. 619.
Body Snatchers. J. Grindle.—p. 627.

Homologous Serum Hepatitis.—In commenting on homologous serum hepatitis, which occurred in 5 men between 48 and 63 and in 1 woman aged 31, Schiff emphasizes the importance of homologous serum jaundice in the differential diagnosis of jaundice, with particular respect to (1) metastatic neoplasm of the liver in patients who have had a recent resection of a malignant tumor, (2) stricture of the common duct (or sometimes stone) in patients who have had a recent operation on the biliary tract, usually a cholecystectomy, and (3) neoplasm as a cause of painless jaundice in middle aged or older persons. It is essential to keep homologous serum jaundice in mind whenever a patient with icterus is seen, regardless of the age of the patient, particularly if there is a history of an illness or an operation two to five months before the development of jaundice, even if the operation was performed on the biliary tract. Suspicions should be confirmed by recourse to the cephalin cholesterol flocculation and thymol turbidity tests.

Echinococcic Infection.—Swartzwelder reports 15 instances of echinococcic infection in 7 men and 8 women between the ages of 22 and 72 years. All 15 occurred in Louisiana. Ten of the 15 patients, 4 of whom were Negroes, were born in the United States. This suggests that human infection with this endemic disease may be acquired in this country. Whereas echinococcic infection has been found more often in native born residents of Louisiana than in immigrants, 95 per cent of the total number of patients with hydatid disease reported from the United States and Canada prior to 1940 in whom the nationality was known were immigrants. The value of employing intradermal and complement fixation tests with either sterile hydatid fluid or substitute tapeworm antigens in an effort to provide a diagnosis prior to operative procedure is emphasized.

Northwest Medicine, Seattle

46:331-412 (May) 1947

Modern Concepts of Neurosurgical Treatment of Herniated Nucleus Pulposus. D. E. Stafford.—p. 358.
Effects of Thrombin Injection into Hematoma Enveloping Fractures of Humerus in Rabbits. E. P. Lasher and G. B. O'Neil.—p. 361.
Safety Factors in Surgery of Colon. J. A. Duncan.—p. 366.
Sutures, Wound Healing and Early Ambulation. E. B. Speir.—p. 368.
Surgical Correction of Ptosis. G. N. Haffly.—p. 370.
Malignant Melanoma of Choroid. W. L. Clothier.—p. 371.
What Can Be Done for Conduction Deafness. W. F. Goff.—p. 372.
Tridione: Its Use in Treatment of Epilepsy and Other Neurologic Disorders. N. K. Rickles and C. G. Polan.—p. 375.

46:413-492 (June) 1947

What Is the Matter with Person Who Is Always Tired? W. C. Alvarez. —p. 437.
Simplified Intravenous Fluid Therapy. J. W. Nadal.—p. 444.
Value of Esophageal Lead in Electrocardiographic Diagnosis. M. Schwartz. —p. 448.
Need for Early Diagnosis of Bronchogenic Carcinoma: Report of 65 Cases. R. Berg Jr., J. K. Poppe and T. L. Havlicek.—p. 452.
Acute Pericarditis Simulating Myocardial Infarction. F. C. Massey. —p. 455.

Occupational Medicine, Chicago

3:335-434 (April) 1947

Health and Safety in Contract Shipyards During the War. P. Drinker. —p. 335.
*Acute Infections of Respiratory Tract and Their Control in Industry, with Special Reference to Immunization Against Influenza. Anna M. Baetjer.—p. 344.
Part Time Industrial Nursing Service as Developed by the Visiting Nurse Association of Detroit. Lucille Harmon.—p. 361.
Lessons Learned from the War. J. G. Townsend.—p. 366.
Fractures of Ankle. C. R. Murray.—p. 376.
*Tellurium: Accidental Exposure and Treatment with BAL in Oil. M. L. Amdur.—p. 386.
In Industry's Service. Victoria M. Trasko.—p. 392.
Vaccination of Industrial Workers Against Smallpox. L. C. McGee. —p. 406.
Cadmium Poisoning by Inhalation: Report of Case. F. F. Huck.—p. 411.

Respiratory Tract Infections.—Baetjer discusses the methods which industry may adopt in an effort to prevent the spread of diseases of the respiratory tract among workers. These diseases are the most important cause of absenteeism due to sickness. Since they originate from persons who have the disease-producing organisms in their nose and throat, the most important preventive measure is good personal hygiene to avoid the dissemination of such organisms into the air. Paper handkerchiefs may be supplied to employees to be used when sneezing, coughing and blowing the nose and then to be placed immediately in receptacles. To prevent droplet infection a distance of a few feet should be allowed between workers who face one another. Oiling of floors is of value in preventing bacteria and other organisms, which settle to the floor, from again contaminating the air. Proper sanitation in the preparation and serving of food is essential. Studies made by the army have shown that the recently developed vaccine against the influenza virus types A and B will greatly reduce the incidence of these diseases. Since the duration of the immunity resulting from this vaccine has not been determined and since epidemics of influenza cannot be accurately forecast, it would seem better not to urge vaccination in anticipation of an epidemic. The continuous administration of sulfonamides for prophylactic purposes may lead to drug resistance and thence to epidemics of these infections. Experiments have shown that neither irradiation with ultraviolet light nor the addition of vitamins to an ordinary diet will increase the resistance of industrial workers to infections of the respiratory tract. Measures to protect against the chilling of the body are important.

Exposure to Tellurium.—Amdur reports accidental single exposure of 3 previously healthy young men to tellurium fume. The total period of exposure in the experimental laboratory was approximately ten minutes. All 3 experienced transient headache and slight epigastric distress within twenty-four hours of their exposure. All 3 were aware of a metallic taste in their mouth. There was no nausea or emesis and nothing to suggest loss of blood from any of the body orifices. The most notable complaint was that of a prominent obnoxious garlic odor present on the breath and in the sweat and presumably due to the detoxification product, dimethyl telluride. Heretofore it has been as protracted as it has been persistent. All 3 patients were given injections of BAL in oil, 2.5 mg. per Kilogram of body weight, deep intramuscularly into the buttock every four hours for the first twenty-four hours and every six hours for the second period of twenty-four hours. Treatment was continued with one injection daily for the ensuing six day period. In 2 patients the garlic odor on the breath and in the sweat had disappeared fourteen days after exposure and in 1 patient thirteen days after the exposure. It is suggested that tellurium may be added to the list of metallic exposures successfully treated with BAL.

Philippine Medical Association Journal, Manila

22:511-576 (Dec.) 1946

Hospital Incidence of Cancer Among Filipinos. I Z. Cruz.—p. 511.
Venereal Disease Control Program in the Philippines. F. Z. Cruz.—p. 523.
Surgical Approach in Case of Large, Multiple Cystolithiasis Obstructing the Free Passage of Fetal Head. B. C. Fontanilla.—p. 531.
Foreign Bodies in Food and Air Passages. J. N. Cruz.—p. 535.
Surgical Aspects of Scurvy. A. A. Galvez.—p. 54[illegible].
Fogging Method of Refraction. G. De Ocampo.—p. 547.

Public Health Reports, Washington, D. C.

62:777-824 (May 30) 1947

*Rickettsialpox—A Newly Recognized Rickettsial Disease: Recovery of Rickettsia Akari from a House Mouse (Mus Musculus). R. J. Huebner, W. L. Jellison and C. Armstrong.—p. 777.
*Plague: Field Surveys in Western United States During Ten Years (1936-1945). N. E. Wayson.—p. 780.
Ultraviolet Irradiation in the Production of Potent Antirabies Vaccines. K. Habel.—p. 791.
Preliminary Studies on Control of Blowflies with DDT. W. C. Baker and L. G. Schwartz.—p. 800.
A New Salmonella Type Isolated from Man: Salmonella Texas. J. Watt, Thelma M. DeCapito and Alice B. Moran.—p. 808.

62:825-864 (June 6) 1947

Control of Tuberculosis in the Americas. T. Parran.—p. 827.
Histoplasmin Sensitivity Among Siblings. Shirley H. Ferebee and M. L. Furcolow.—p. 834.

Rickettsialpox.—Huebner and his associates state that Rickettsia akari, the causative agent of rickettsialpox, was isolated from the blood of persons with this disease and from the rodent mite Allodermanyssus sanguineus Hirst inhabiting the domicile of persons who were ill. The authors isolated R. akari from a house mouse trapped on the same premises—a housing development in the city of New York where more than 100 cases of rickettsialpox have occurred. Infestations of house mice with the mites were described in a previous communication. The ability of A. sanguineus to transmit rickettsialpox to experimental animals was demonstrated. The data presented show that the house mouse (Mus musculus) may harbor the infection in nature.

Plague: Field Surveys in Western United States.—Wayson says that investigations of the circumstances surrounding the death of 2 persons from bubonic plague in July 1908 in a semirural area bordering San Francisco Bay revealed an enzootic of plague among the California ground squirrels. This discovery stimulated explorations to determine the extent to which the infection had spread. Investigations of the circumstances which may influence the epizoology and epidemiology of plague have been carried on concurrently in the field and in the laboratory. All of the laboratory studies confirm previous findings that Pasteurella pestis exhibits consistent characteristics which do not permit differentiation of strains recovered from rats, from other rodents, from fleas or from man. These investigations have also established that each of a number of species of fleas may serve as vector of the disease for different rodent hosts. Foci of bubonic plague among rodents of several genera are widely scattered throughout the area within the north and south boundaries of the United States and from the Pacific Ocean to approximately the 102d meridian west. The rapidity of extension eastward will probably be influenced by the density of the rodent populations and the persistence from year to year of foci in which acute outbreaks recur. An element of chance enters into the fulfilment of conditions favorable to the progressive spread of the disease. It has been disseminated over large areas of the United States, and the possibilities of its introduction into new areas through migrations and through the channels of commerce and transportation are deserving of continuous attention.

Radiology, Syracuse, N. Y.

48:441-562 (May) 1947

*Venous Catheterization of Heart: I. Indications, Technics and Errors. M. C. Sosman.—p. 441.
*Id.: II. Results, Interpretations and Value. L. Dexter.—p. 451.
Cholangiography and Biliary Regurgitation. L. G. Rigler and H. W. Mixer.—p. 463.
Epipericardial Fat Shadows in Differential Diagnosis. J. F. Holt.—p. 472.
Cardioesophageal Relaxation as Cause of Vomiting in Infants. E. B. D. Neuhauser and W. Berenberg.—p. 480.
Lymphoblastoma: Evaluation of Differences in Sensitivity to X-Ray Irradiation of Different Types and Its Application to Quantitative Therapeutic Test. W. L. Palazzo.—p. 484.
*Differential Diagnosis of Intracranial Neoplasms by Cerebral Angiography. C. F. List and F. J. Hodges.—p. 493.
Familial Osseous Atrophy. G. Cooper Jr., N. Adair and W. M. Patterson.—p. 509.
Absorption of Radon Through the Skin and Its Exhalation Through the Lungs. K. Lange and R. D. Evans.—p. 514.
Evolution of Radiology in Latin America. J. T. Case.—p. 517.

Venous Catheterization of Heart.—Sosman reports the results of 100 examinations for congenital heart disease, other forms of heart disease, pulmonocardiac disease and renal function. The technic of heart catheterization is illustrated by roentgenograms. The comfort of the patient is important for the success of the test. Teamwork is essential. Failure to secure adequate or reliable data from this test has been infrequent; only 13 examinations out of 100 were unsatisfactory. Spasm of the vein around the catheter in the arm may prevent passage to the desired spot but has not interfered with withdrawal of the catheter. Venospasm is more apt to occur if the patient is uncomfortable or in pain. When trying to pass the tip of the catheter through the tricuspid valve, ventricular extrasystoles occur in about half of the cases. A few have mentioned an accompanying sensation of tightness in the substernal area or neck. In only 2 instances were the subjective symptoms distressing enough to cause abandonment of the procedure. The dangers most commonly feared are damage to the endothelium of the large veins or of the heart and the possibility of thrombus formation, but no thrombi have been formed. Some patients succumbed to their disease or conditions unrelated to the procedure, and in necropsies no trace of damage could be found.

Value of Catheterization of Heart.—Dexter describes experiences with catheterization of the heart in representative types of congenital heart disease. He concludes that, in order to obtain interpretable results in congenital heart disease, venous catheterization must be performed by a well trained team of at least three persons working smoothly and efficiently, and it should be used in conjunction with the usual procedures of history, physical examination, electrocardiography, fluoroscopy and, if available, the Robb-Steinberg technic of visualization of the cardiac chambers with diodrast. Venous catheterization is essentially a physiologic procedure and has certain limitations. Now that cure or improvement of certain congenital cardiac defects is possible by surgery, venous catheterization promises to be an important aid in preoperative diagnosis.

Cerebral Angiography and Intracranial Neoplasms.—List and Hodges say that in a series of 125 patients with intracranial tumor subjected to angiography at the University of Michigan Hospital a special vascular pattern was observed in angioma, meningioma, glioblastoma and certain types of astrocytoma. Although a characteristic pattern is not always to be found, the angiograms often are so characteristic as to permit a preoperative anatomic diagnosis.

Surgery, St. Louis

21:773-936 (June) 1947

*Surgical Treatment of Hypertension: III. "Neurogenic" versus Renal Hypertension from Standpoint of Operability. G. de Takats and E. F. Fowler.—p. 773.
Fascia Lata Regeneration: Animal Experimentation. J. C. Foshee.—p. 800.
Id.: Final Report. J. C. Foshee.—p. 819.
Acute Suppurative Phlebitis Complicated by Septicemia. H. Neuhof and G. P. Seley.—p. 831.
*Ambulatory Treatment of Phlebitis, Thrombophlebitis and Thrombosis with Compression Bandages. O. Meyer.—p. 843.
*Multiple Retrograde Saphenous Vein Ligation and Phlebectomy with Aid of Malleable Intraluminal Guide. A. M. Vaughn.—p. 851.
Graded Leg Exercises. J. K. Narat and A. F. Cipolla.—p. 861.
Successful Primary Repair of Lacerated Stenson's Duct. R. E. Goodall and Sarah E. Flanders.—p. 865.
*Use of Penicillin in Connection with Grafting of Bone into Infected Defects in Skulls of Experimental Animals. H. J. McCorkle, E. Kerr, S. Rothenberg and Helen Warmer.—p. 870.
Neurofibroma of Posterior Mediastinum. I. D. Puppel.—p. 875.
Curare and Shock: Production of Hemorrhage into Upper Intestine of Dog with Large Doses of Curare. F. Cole, I. D. Baronofsky and O. H. Wangensteen.—p. 881.
Postoperative Protein Deficiency, with Special Reference to Cancer Patient. H. M. Wiley.—p. 889.
Jejunal Malignancy. E. A. Connolly and A. W. Lempka.—p. 901.
Amputation of Index Ray J. H. Mahoney, G. S. Phalen and W. H. Frackelton.—p. 911.
Surgical Treatment of Ingrown Toenail. B. G. Clarke and K. A. Dillinger.—p. 919.

Surgical Treatment of Hypertension.—De Takats and Fowler report the results of splanchnic nerve section on 19 patients with hypertension. Eleven were females between the ages of 7 and 46 years and 8 were males between 13 and 39. The patients have done well, moderately well and poorly. The operation, a transdiaphragmatic approach, technically left nothing to be desired. The clinical history and renal biopsies made it possible to separate a group of patients who suffered organic renal damage and showed good response to surgery. The so-called neurogenic group (4 of the 19 patients) failed to respond even though there was little or no detectable damage. It is suggested that such hypertension exhibits a hypothalamic-pituitary stimulation which is not mediated by the sympathetic nervous system.

Ambulatory Treatment of Phlebitis.—In the treatment of acute and chronic phlebitis of the legs, Meyer has used for fifteen years the elastic combination bandage. It consists of a 4 inch wide, moist, medicated, viscous, nonsetting, zinc-gelatin type (contura) bandage and a 3 inch wide, elastic, adhesive pressure (pressoplast) bandage. The elastic adhesive bandage is used for compression and grip. By applying a strong and even pressure around the leg to a point above the inflamed vein one succeeds in compressing the dilated veins, thereby restoring function of the valves and normal circulation. The pressure also promotes the absorption of existing thrombi and prevents their detachment from the walls of the veins. The restoration of the circulation prevents formation of new thrombi and removes the swelling. After application of the bandage the patient is told to walk as much as possible, at least 3 miles daily, and to avoid standing. The bandage is changed at first every third day and later twice a week. The treatment cures the phlebitis in the leg by eliminating the venous congestion, thereby removing the locus minoris resistentiae and making it possible for the affected tissues to overcome the infection. The treatment must be supplemented with removal of primary foci in the oral cavity and secondary foci in the jugular veins to prevent reinfection of the veins of the leg.

Retrograde Saphenous Vein Ligation and Phlebectomy.—According to Vaughn, varicose veins may recur after high saphenous ligation combined with retrograde injection. This recurrence following adequate surgery in the femoral triangle may be due to incompetent communicating or perforating veins, which hastens recanalization of the thrombus in the saphenous. Retrograde ligation and excision of segments of the saphenous vein at different levels above and below the knee should interrupt any reverse flow of blood which might come from incompetent communicating or perforating veins higher up. A medium size malleable intraluminal guide facilitates finding the saphenous vein both above and below the knee and many times in locating an incompetent communicating or perforating vein or aneurysm. A small piece of umbilical tape rolled on itself and attached to a hemostat facilitates dissection of the vein. Longitudinal incisions are superior to transverse incisions in retrograde saphenous ligation and phlebectomy. Retrograde ligation and excision are to be considered superior to retrograde injection.

Penicillin and Bone Grafts in Infected Skulls.—McCorkle and his co-workers produced infected bone defects in the skulls of dogs, contaminating the wounds with street dirt. After the chronic infections had become well established the animals were subjected to operations at which granulations, scar and sequestrums were removed, bone grafts placed in the skull defects and the wounds closed in layers with cotton sutures without drainage. Ten animals were used as controls and the other ten were given 100,000 units of penicillin daily for two days preoperatively and for twenty-one days postoperatively. In the animals treated with penicillin there was satisfactory healing of soft tissues, survival of the bone grafts and union between graft and skull in the presence of both penicillin susceptible and penicillin resistant organisms. These results appear significant when contrasted with the suppuration of the soft tissues and absorption or loss of grafts that occurred in most of the untreated control animals.

Tennessee State Medical Assn. Journal, Nashville

40:137-168 (May) 1947

Problems in Field of Medical Economics. H. H. Shoulders.—p. 137.
Distribution of Medical Care in Tennessee. C. M. Hamilton.—p. 142.
Functions of County Societies. J. C. Burch.—p. 151.

40:169-204 (June) 1947

*Present Day Management of Early Syphilis. D. C. Smith.—p. 169.
Epidemiology and Recent Developments in Poliomyelitis. J. G. Molner.—p. 176.
*Phrenic Paralysis in Treatment of Pulmonary Tuberculosis. F. H. Alley.—p. 181.
External Rupture of Aortic Aneurysm—Case Report. S. M. Vaughan.—p. 187.
Lead Encephalopathy—Case Report. C. W. Woolley.—p. 188.

Management of Early Syphilis.—Smith stresses that a large percentage of cases of early syphilis are not cured by penicillin, regardless of dosage. The relapse rate with all short rapid treatment schedules is high. Therapy should be continued for at least eight to twelve weeks in early syphilis, using penicillin, arsenic and bismuth.

Phrenic Paralysis in Treatment of Pulmonary Tuberculosis.—Alley and Hubbard say that phrenic paralysis is not being employed extensively in the treatment of pulmonary tuberculosis. They wish to stimulate more interest in the use of this method because there is often much to be gained by the use of this procedure and seldom anything is lost by giving it a trial. The procedure used by the authors was to crush the main phrenic trunk, or trunks as are sometimes found, and to resect all accessory phrenic trunks from the fifth cervical root, including the nerve to the subclavicus muscle. If permanent paralysis of the diaphragm was desired, 1 to 2 centimeter sections of all main phrenic trunks as well as the accessory were taken. A study of results obtained from 765 operations on 627 patients indicates the therapeutic value of the procedure and strengthens the belief that phrenic paralysis should receive more consideration in the treatment of pulmonary tuberculosis.

Texas State Journal of Medicine, Fort Worth

43:49-162 (June) 1947

Our Changing Methods. C. C. Cody Jr.—p. 56.
Memorial Address. M. D. Levy.—p. 59.
Management of Emotional Disorders in Adults. M. J. Cooper.—p. 6
*Eosinophilic Granuloma of Bone. R. N. Cooley and G. D. Carlson—p. 64.
*Brenner Tumor of Ovary: Two Cases Associated with Postmenopausal Endometrial Changes. J. J. Andujar, G. R. Enloe and W. B. Swift—p. 70.
Variance of Hydrogen Ion Concentration (p_H) of Normal and Abnormal Vaginas. K. J. Karnaky.—p. 73.

Eosinophilic Granuloma of Bone.—Cooley and Carlson say that, since the introduction by Lichtenstein and Jaffe in 1940 of the term eosinophilic granuloma of the bone, considerable information has been gathered about this condition

The authors report observations on 10 patients seen in military hospitals during the last three years. The patients complained of pain or discomfort in the region of the bony lesions. Localized tenderness was usually present at the onset but decreased after a period of weeks. Six of 10 patients showed localized soft tissue swelling. Constitutional symptoms were usually absent. Eosinophilia was seen in only 1 of these patients and that was after roentgen therapy.. In the x-ray studies the osseous lesions often simulated Schüller-Christian's syndrome. The configuration of the defect was typically round or oval, sometimes cloverleaf, representing bone destruction with replacement by radiolucent granulomas. This created a "punched out" appearance. Most cultures of the curetted material were sterile. Pathologic studies were incomplete, since there have been no deaths. The white or yellowish granulations separated quite easily from the bone and left a slightly roughened margin. A combination of surgical and radiation treatments seemed to produce the best therapeutic results.

Brenner Tumor of Ovary.—Andujar and his co-workers report observations on Brenner tumor occurring in 2 women aged 72 and 64. In each instance hyperplastic endometrial changes were present, in 1 patient of polypoid type, in the other patient of simple Swiss cheese structure. Both patients were relieved of their uterine bleeding by operation. In 1 instance relief followed removal of a large Brenner tumor; in the other it occurred after excision of both the ovarian tumor and the uterus. In view of the continued failure to report hormonal activity of Brenner tumor, the association of hyperplastic uterine bleeding with these tumors is probably purely coincidental. Brenner tumor is probably far more common than one would suppose from the few cases thus far reported.

United States Naval Med. Bulletin, Washington, D. C.

47:391-578 (May-June) 1947

Burns. H. L. Pugh.—p. 391.
Distribution and Use of Human Whole Blood in Pacific War. H. R. Brown Jr.—p. 396.
*Emotion: Etiologic Relation to Illness: E. L. Caveny.—p. 421.
Naval Medical Specialists Units: Proposed Plan for Reorganization and Continuation. R. A. Kern.—p. 429.
Medical Specialists in Naval Service. P. Titus.—p. 438.
Treatment of Acute Acromioclavicular Dislocations. W. A. Gunther and W. E. Snell.—p. 444.
Single Injection Therapy for Gonorrhea. T. Camp.—p. 451.
Nummular Eczema and Prostatitis: Treatment with Penicillin. C. C. Carpenter, C. R. Nuckolls and J. S. Dyke.—p. 453.
Psychiatric Evaluation of Naval Delinquent. L. D. Boshes.—p. 458.
Evaluation of Physical Training Program at Naval Air Station. J. G. Stubenbord.—p. 473.
Observations on Production of Hydrogen Sulfide by Shigella Alkalescens. L. A. Barnes and Joan E. Casterline.—p. 478
Army-Navy Medical Matériel Coordination. V. W. H. Campbell.—p. 481.
*Critical Analysis Obtained from 873 Electroencephalographic Examinations. R. Rossen.—p. 494.

Emotion in Relation to Illness.—According to Caveny the practitioner of medicine encounters few medical or surgical problems which do not have a psychosomatic component. Instincts as well as personal desires and ideas are constantly being checked and subdued by environmental, educational and social influences. These opposing forces give rise to conflict. If adjustment is faulty, the individual takes recourse to anxiety, headaches, nausea and vomiting. Persons with psychosomatic ailments do not always show manifest symptoms of emotional imbalance; therefore the psychic factors often remain undetected, and this may delay or prevent recovery. Until recently most physicians believed that only gastrointestinal conditions, as peptic ulcers and colitis, could be considered to be psychosomatic. The emotions are now regarded as the primary cause in many cases of bronchial asthma, hay fever, hypertension, heart disorders, the common cold and various dermatologic conditions as hives, warts and allergic reactions, as well as many other physical illnesses. If the emotions are not the primary cause they may be a precipitating or aggravating factor. The general practitioner's job is prophylactic, therapeutic and morale building. He accomplishes this aim by maintaining a philosophy of medicine which makes for a full knowledge of the sick man, a person whose illness may have a social implication. Even though the practitioner appears to perform his job intuitively, he possesses considerable knowledge of psychiatry and the psychosomatic approach as well as the basic principles of psychotherapy.

Analysis from 873 Electroencephalographic Examinations.—Rossen correlates the results of 873 electroencephalographic examinations with the admission and discharge diagnoses of neuropsychiatric patients studied at a United States naval hospital. Of the 226 discharged with the diagnosis of epilepsy, 50 per cent showed abnormal electroencephalograms and 19.9 per cent showed slightly abnormal electroencephalograms. Of the remaining 647 cases with other discharge diagnoses, which included various functional neuropsychiatric and organic neurologic conditions, 18.4 per cent had abnormal electroencephalograms and 20.7 per cent had slightly abnormal electroencephalograms. From comparisons with control series it appears that clinical neuropsychiatric evaluation is at present superior to electroencephalographic examination alone in determining qualification for military service except in convulsive disorders. This is in agreement with other investigators, who thought that the use of electroencephalography in screening army entrants or soldiers who have suffered neurotic breakdown should be engaged in with the utmost caution.

Western J. Surg., Obst. & Gynecology, Portland, Ore.

55:313-362 (June) 1947

Late Pregnancy Toxemia: II. Clinical Trials Based on Experimental Findings. O. W. Smith and G. Van S. Smith.—p. 313.
Protein Therapy and Electrolyte Balance. H. E. Peters Jr.—p. 323.
Perforated Ulcer in a Child: Report of a Case. M. Orlov.—p. 326.
*Circulation Time in Diagnosis and Differential Diagnosis of Thyroid Disease. E. B. Hay.—p. 329.
Hypothyroidism and Its Relation to Gynecologic Problems. L. W. Mason.—p. 338.
Some Aspects of Thyroid Function in Relation to Infertility. D. L. Dickerson.—p. 343.
*Studies on Human Artificial Insemination. A. I. Weisman.—p. 348.

Circulation Time in Differential Diagnosis of Thyroid Disease.—Hay used calcium gluconate for the estimation of the circulation time. He compared the circulation time, basal metabolic rates and blood cholesterol levels of 40 patients with abnormalities of the thyroid, 30 with toxic goiter, 5 with myxedema and 5 with nontoxic adenomatous goiter. The patients with myxedema had a minus basal metabolic rate and a prolonged circulation time. Those with nontoxic adenomas have normal metabolic rates and circulation times. Most of those with toxic thyroids had a high basal metabolic rate and short circulation time. Not all patients with toxic goiters have the classic signs and symptoms; 30 per cent are seen to have either a normal basal metabolic rate or a normal circulation time. It is in these cases that multiple tests are helpful in establishing the diagnosis. In 17 per cent of the cases the circulation time was within normal limits and the basal metabolic rate was elevated. In 13 per cent of the patients the basal metabolic rate was normal and the circulation time short. Here the circulation time was more valuable in the diagnosis. In only 70 per cent of toxic goiters were the basal metabolic rate and the circulation time both diagnostic, and in only 60 per cent of the cases were all three—the basal metabolic rate, circulation time and blood cholesterol—diagnostic. The author makes a plea for multiple tests in evaluating toxic goiter, at least in the borderline cases. The circulation time is not a substitute for clinical evaluation or any other helpful tests in the diagnosis of toxic goiter. It was not a good criterion for determining the optimal time of operation in this series.

Human Artificial Insemination.—Eighty-seven apparently fertile women whose husbands were definitely sterile were inseminated artificially with donor semen over a period of seven years. Seventy-four of the women became pregnant. Follow-ups of the successful cases revealed that children conceived by this method were physically and mentally as sound as children produced by the natural method. Weisman says that the most valuable finding of the follow-up survey was the healthy psychologic relationship of the family unit having a child derived through artificial donor insemination.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Annals of Tropical Medicine, Liverpool

41:1-164 (May) 1947. Partial Index

Observations on Use of Sodium Antimony Gluconate (Sodium Stibogluconate) in Treatment of Kala-Azar. R. Kirk and M. H. Sati. —p. 14.
Attempts to Induce Blackwater Fever Experimentally. G. M. Findlay and J. L. Markson.—p. 22.
Modification of Trypanosoma Rhodesiense on Prolonged Syringe Passage. H. Fairbairn and A. T. Culwick.—p. 26.
Studies on Synthetic Antimalarial Drugs: The Absorption, Distribution and Excretion of Paludrine in Experimental Animals. A. Spinks. —p. 30.
Modification of Zinc Sulfate Centrifugal Flotation Technic for Concentration of Helminth Ova and Protozoan Cysts in Feces. J. M. Watson. —p. 43.
Effect of Intramuscular Injection of Paludrine and Quinacrine in Experimental Animals. J. R. M. Innes.—p. 46.
Aortic Size in East African Natives. G. W. A. Dick.—p. 52.
Trypanosome Counts in Trypanosoma Congolense Infections. S. G. Laws. —p. 116.
Sodium Stibogluconate in Treatment of Kala-Azar: Report on Treatment of 8 Cases and Appearance of Probable Drug Reactions. B. Maegraith, J. C. Brundrett, J. D. Rigby and R. A. Sladden.—p. 118.
*Part Played by Feces and Vomit-Drop in Transmission of Endameba Histolytica by Musca Domestica. E. W. Roberts.—p. 129.
Investigation into Effects of "Gammexane" on Larvae, Pupae and Adults of Culicoides Impunctatus Goetghebuer and on Adults of Culicoides Obsoletus Meigen. Marjorie A. Hill and Enid W. Roberts.—p. 143.
Nematodes in Tsetse. W. E. F. Thomson.—p. 164.

Transmission of Endameba Histolytica by Musca Domestica.—A survey of the literature and experiments convinced Roberts that a fly given access to infected material may transmit Endameba histolytica cysts in its feces. Experiments have shown that the period during which the fly can be regarded as a source of infection by this route may extend from five minutes to at least thirty-one hours after the initial infective feeding—the limit of the observations—and that during this period cysts are excreted in considerable, though irregular, numbers. Studies on the part played by the vomit drop in the spread of E. histolytica cysts prove that E. histolytica cysts taken up by house flies during the act of feeding subsequently appear in their vomit drops at irregular intervals and in irregular numbers throughout an observation period of nine hours after the initial infective feeding. The route taken by the cysts occurring in the vomit drop has not been definitely ascertained. It is generally believed that in urban areas polluted drinking water and food handlers are the main sources of infection with amebic dysentery. In rural areas, particularly in the tropics, flies may prove of greater importance, for, under such conditions, not only do they tend to occur in greater numbers but, owing to lack of sanitation, they have readier access to infected excreta and to human food supplies.

British Journal of Radiology, London

20:221-260 (June) 1947

The Jubilee of the Röntgen Society. A. E. Barclay.—p. 221.
Interpretation of Children's Chest X-Rays. L. G. Blair.—p. 223.
Note on Use of Lysholm Skull Table. D. Gordon.—p. 238.
Quantitative Analysis of Direct and Indirect Action of X Radiation on Malignant Cells. Ilse Lasnitzki.—p. 240.
Device to Facilitate the Production of X-Ray Isodose Curves. R. G. Mitchell.—p. 248.

British Medical Journal, London

1:795-818 (June 7) 1947

Centennial of the American Medical Association. M. Fishbein.—p. 795.
Sulfone Treatment of Leprosy. E. Muir.—p. 798.
*Tropical Eosinophilia in East Africa. H. T. H. Wilson.—p. 801.
*Causalgia of the Face: 2 Cases Successfully Treated by Sympathectomy. J. A. W. Bingham.—p. 804.
Inpatient Treatment of the Maladjusted Child. Elizabeth G. W. Barker and W. L. Milligan.—p. 805.

Tropical Eosinophilia in East Africa.—According to Wilson the syndrome now generally known as tropical eosinophilia or eosinophilic bronchitis was first described by Frimodt-Möller and Barton in southern India in 1940. Weingarten in 1943 reported 81 cases of tropical eosinophilia. While tropical eosinophilia can no longer be regarded as a rare disease in India and Ceylon, its existence in Africa has not yet been generally recognized, although isolated cases have been reported. Wilson performed differential white blood cell counts on a consecutive series of 34 patients attending the native civil hospital in Dar-es-Salaam, Tanganyika, with symptoms of recurrent bronchitis or asthma. In 6 the eosinophilia ranged from 40 to 78 per cent. This group and a seventh patient referred on account of an unexplained eosinophilia were submitted to detailed investigation. All had tropical eosinophilia. Six were treated successfully with arsenic, while the seventh recovered spontaneously. The characteristic picture appeared to be recurrent attacks of cough, wheezing and low fever separated by intervals in which the only symptom was a spasm of unproductive coughing in the morning. The etiology of tropical eosinophilia remains obscure. Löffler in 1936 described a syndrome characterized by fever, cough and eosinophilia which resembles tropical eosinophilia but seldom lasts more than eight days, whereas tropical eosinophilia, if untreated, may persist for years. It seems unlikely that the two conditions are identical. The detection of tropical eosinophilia in 6 of 34 patients with chronic cough or asthma suggests that the condition is relatively common in East Africa.

Causalgia of Face.—Bingham observed 2 cases of causalgia of the face. The first patient had sustained a small penetrating wound of the right cheek. Burning pain on the right side of the face developed on the day he was wounded and was still present a year later. Hyperalgesia of the skin supplied by the three divisions of the trigeminal nerve was present. The facial pain was completely relieved by a procaine block of the stellate ganglion. When the pain returned, it was decided to excise the superior cervical sympathetic ganglion. This operation relieved the facial pain and tenderness, and there was no sign of their return three months later. In the second patient, who had sustained multiple mortar wounds on the side of the face and head, there developed a continuous burning pain, usually confined to the maxillary division of the trigeminal nerve. In this patient the lower half of the superior cervical ganglion and a portion of the sympathetic chain were excised, and facial tenderness and pain were relieved.

Journal of Hygiene, London

45:111-250 (May) 1947. Partial Index

Nature of Somatic Phase Variation and Its Importance in Serologic Standardization of O-Suspensions of Salmonellas for Use in Widal Reaction. W. Hayes.—p. 111.
Craigie's Vi Phage Method and South African Strains of B. Typhosus, with Special Reference to Typhoid Carriers. C. G. Crocker.—p. 118.
Studies in Dynamics of Disinfection. R. C. Jordan, S. E. Jacobs and H. E. F. Davies.—p. 136.
Fatal Meningitis Due to a Capsulated Neisseria. A. L. M. Christie and G. T. Cook.—p. 149.
*Bacteriologic Investigation of Washing and Sterilization of Food Containers: Report to the Medical Research Council. R. Knox and Jacqueline Walker.—p. 151.
Experiments on Infection of Cows with Typhoid Bacilli. W. M. Scott and F. C. Minett.—p. 159.
Improved Guns for Delivery of Liquid DDT Spray and Powder by Mechanical Compressors. I. Gordon.—p. 173.
Mosquito Repellents: Report of Work of Mosquito Repellent Inquiry, Cambridge 1943-1945. S. R. Christophers.—p. 176.
Survey of Tuberculosis in Industrial County of Lanarkshire, Scotland. T. G. Brown.—p. 232.

Bacteriologic Studies on Food Containers.—Outbreaks of food poisoning induced Knox and Walker to investigate bacteriologically the conditions in a central meals kitchen from which about 3,000 meals were issued daily. Plate counts showed that the containers in which the meals were sent out contained large numbers of organisms, from several thousand to several hundred thousand. Counts of this order were obtained both before and after the routine method of washing. These counts were reduced to the order of a few hundred or less per container by steam sterilization. Exposure for two to three minutes to steam from a simple jet sterilizer was effective for all except large insulated lids, which required at least five minutes. Treatment for five minutes in a chamber filled with steam from a boiler was effective with all types of containers and lids tested. If containers are to be sterilized at all, they must be sterilized each time they are to be used. Counts almost as good as those given by steam sterilization were obtained by washing with soap and water at 48 to 50 C., wiping with a sterilized dish cloth and then rinsing in a second sink of water at 75 to 80 C.

J. of Neurol., Neurosurgery and Psychiatry, London

10:1-48 (Feb.) 1947

Use of Mental Tests for Measurement of Disability After Head Injury: Comparison Between Results of Tests in Patients After Head Injury and Psychoneurotics. G. Tooth.—p. 1.
Marbled Condition of Corpus Striatum Following Birth Injury. R. M. Norman.—p. 12.
"Pins and Needles": Observations on Sensations Aroused in Limb by Application of Pressure. G. Weddell and D C. Sinclair.—p. 26.

Lancet, London

1:775-814 (June 7) 1947

Social Aspects of Epilepsy. J. T. Fox.—p. 775
Infective Jaundice in Iceland. L. S. Anderson p. 778.
*Prenatal and Postnatal Development of Immunity: Serum Albumin and Serum Globulin Levels in Maternal and Cord Bloods of Premature Infants. C. Rimington and J. A. Bickford -p. 781.
Hypoglycemia Due to Islet Cell Adenoma of Pancreas. R. L. Bishton and J. M. Malins.—p. 785.
Blood Urea in the First Nine Days of Life R. A. McCance and E. M. Widdowson.—p. 787.
Postvaccinal Encephalitis: 2 Probable Cases in African Children. J. N. P. Davies.—p. 788.
Diseases of Thyroid Gland in Occupied Belgium P. A. Bastenie.—p. 789.
Gumma of the Thyroid. A. H. Barber.- p 791

Prenatal and Postnatal Development of Immunity.—Rimington and Bickford point out that little is known about serum protein levels of infants and their mothers at and before parturition. The present investigation was undertaken to fill this gap and so provide a basis for a possible relation between susceptibility to neonatal infections and the degree of development of the protein elaborating mechanisms. Determinations were made of the total protein, nonprotein nitrogen, albumin and globulin in the maternal and cord blood from 38 cases, mainly of premature birth, the youngest fetuses being 20 weeks old. The fetal albumin and globulin increase with the length of gestation and at about the same rate Mean full term values were 4.16 Gm. per hundred cubic centimeters for albumin and 2.37 Gm. per hundred cubic centimeters for globulin. The maternal albumin and globulin are not affected by the length of gestation and are only slightly correlated with the fetal values. It is suggested that there may be a fetal mechanism of synthesis of both albumin and globulin which becomes relatively less important as the adult mechanisms of synthesis develop and take its place. The serologic immaturity of the newborn would be understandable on this basis.

Transactions Roy. Soc. Trop. Med. and Hyg., London

40:511-726 (May) 1947

Recent Knowledge About Malaria Vectors in West Africa and Their Control. R. C. M. Thomson.—p. 511.
Transmission of Malaria in Borneo. J. McArthur —p. 537.
Action of Gammexane on Arthropods of Medical and Veterinary Importance. J. S. Steward.—p. 559.
Destruction of Adult *Mosquitoes by Residual DDT Methods.* L. G. Eddey.—p. 567.
*Residual Action of DDT Against Anopheles Gambiae and Funestus. K. S. Hocking.—p. 589.
Experiments with DDT on Various Species of Tsetse Flies in Field and Laboratory. F. L. Vanderplank.—p. 603.
Sidelights on Malaria in Man Obtained by Subinoculation Experiments. N. H. Fairley—p. 621.
*Monkeys in Relation to Yellow Fever in Bwamba County, Uganda. A. J. Haddow, K. C. Smithburn. A. F. Mahaffy and J. C. Bugher. —p. 677.
Behavior of Sudan Strain of Leishmania Donovani in Phlebotomus Papatasii: Comparison of Strains of Leishmania. S. Adler.—p. 701.
Mucocutaneous Leishmaniasis in Kenya: Note on Penicillin Treatment. F. Piers.—p. 713.
Exoerythrocytic Schizogony in Plasmodium Kochi Laveran. P. C. C. Garnham.—p. 719.

Residual Action of DDT Against Gambiae and Funestus.—The experiments described by Hocking were undertaken to provide guidance in the practical employment of DDT impregnation as an antimalarial measure in the East Africa command. It is concluded that Anopheles gambiae and Anopheles funestus tend to leave a lightly treated building, but that with an impregnation of about 200 mg. per square foot final mosquito mortality approaching 100 per cent will be achieved and that on most surfaces the effect will last for at least four to six months. Limewash, particularly if recently applied, neutalizes the residual action of DDT on walls.

Monkeys in Relation to Yellow Fever in Uganda.—Haddow and his associates say that for several years studies on the epidemiology of yellow fever have been conducted in Bwamba County, Uganda. The work has included the collection of blood samples from wild monkeys for examination by the protection test. Many other groups of animals also have been investigated, but so far immunity to yellow fever has been found only in monkeys. Twelve species and subspecies of monkeys have been found to occur in Bwamba. In addition there are two members of the suborder Lemuroidea. It is suggested that the lowland colobus monkey (Colobus polykomos uellensis Matschie) is the main species involved in the monkey to monkey yellow fever cycle of the uninhabited forest areas, that the redtail (Cercopithecus nictitans mpangae Matschie) plays an important part in bringing the virus into contact with man and that the remaining species are of less importance in the local epidemiology. In Bwamba the susceptible monkey population becomes immunized at the rate of 27 per cent annually. This observation, in conjunction with other evidence, indicates that yellow fever is truly endemic among the monkeys of the Bwamba lowlands.

Presse Médicale, Paris

55:357-368 (May 31) 1947

Hematogenous Meningotyphoid Fever. A. Raybaud, R. Depieds and G. Giraud.—p. 357.
Early Diagnosis of Cancer of Uterus by Cytologic Examination of Cervical Secretions. A. Guidoux.—p. 358.
**Genitohypophysial Reflex and Ovulation. R. Segond.—p. 359.*
Penicillin Treatment with Delayed Elimination. M. Morgenstern and A. Grimberg.—p. 360.

Genitohypophysial Reflex and Ovulation.—According to Segond, stimulation of the genital sphere brings into play a neuroangiotropic reflex which itself is to be considered as generator of a pituitary glandular action on the ovulation. Stimulation of the superior cervical ganglion induces hypophysial secretion of the follicle stimulating and luteinizing factors of anterior pituitary-like principle. The deficiency of the gonadotropic pituitary-like principle may be considered responsible for lack of ovulation. Laboratory proof of this concept was furnished: During the first eight days of the cycle pituitary hormone was not demonstrable in the urine; the absence of this secretion was confirmed by a negative test on mice not arrived at puberty. Stimulation at the level of the uterus (dilation of the cervix, lipiodol) was carried out, followed next morning by a repeated search for chorionic gonadotropin in the urine. This time the test was positive: there was macroscopic evidence of the development of the genital tract and of follicle growth on the surface of the ovary, confirmed by microscopic demonstration of numerous ripe follicles. Any treatment of sterility in women must be directed to ovulation by the reflex route producing a genitohypophysial reflex. Numerous pregnancies resulted from cervical dilation on the sixth day of the cycle repeated at the same date for three months, but the whole procedure had to be repeated again for each new pregnancy.

Semaine des Hôpitaux de Paris

23:1163-1212 (May 14) 1947

Antiphage Properties of Blood Serum in Latent Infections and Septic Postoperative Accidents. A. Raiga.—p. 1163.
Isolated Cold Abscess of Appendix. P. Funck-Brentano.—p. 1169.
*Cancer of Stomach in First Two Decades of Life. P. Funck-Brentano and R. Tubiana.—p. 1171.

Cancer of Stomach in Children and Adolescents.—Funck-Brentano and Tubiana report cancer of the stomach in a boy aged 15. Subtotal gastrectomy of the Polya type was performed. Microscopic examination revealed an ulcerated epithelioma with multiple metastases of lymph nodes. The boy was alive six months after the operation; he had gained weight and had no complaints. Analysis of 92 cancers of the stomach in children and adolescents less than 20 years of age reported in the literature demonstrates that the condition is extremely rare under 20 years of age but ceases to be exceptional over 20. Sixty-nine of the 92 patients had epithelioma, 17 had sarcoma and 6 had Krukenberg tumor. Epithelioma is the least rare in children and adolescents, as it is in adults. The symptomatology of cancer of the stomach is polymorphic and does not differ from that in the adult. Roentgenography offers considerable aid to diagnosis. Interpretation of the roentgenograms should be made without regard to the age of the patient. Gastrectomy is the preferred method of treatment. The risk of postoperative anemia does not seem important in spite of the youth of the patients operated on.

Schweizerische medizinische Wochenschrift, Basel

77:467-490 (April 26) 1947

Riedel's Ligneous Struma and Focal Infection. M. Richard.—p. 471.
Intestinal Invagination. E. Juillard.—p. 474.
*Local Penicillin Treatment of Diphtheria and of Diphtheria Bacilli Carriers: Experiences in 45 Cases. Verena Gut.—p. 476.
Method of Staining for Microscopic Examination of Spirochetes. S. Vagó.—p. 479.
*Comparative Sedimentation Rates for Erythrocytes Following Autohemotherapy as New Diagnostic Aid. W. Ruge.—p. 480.
Special Exercise Treatment of Arm Amputation Stumps in Preparation and Supplementation of Kineplastic Operations. H. Moser.—p. 484.
Endothelial Leukocytes. P. B. Grawitz.—p. 486.

Local Penicillin Treatment in Diphtheria.—Gut used local penicillin therapy in the form of a spray. At first she used a concentration of 250 units per cubic centimeter, but later the concentration was increased to 1,000 units. There was no difference in the efficiency of these two concentrations. The spray was applied three times daily on the pharynx and tonsils, as well as into the nostrils. Of the 45 patients treated, 26 had pharyngeal diphtheria and 19 were bacillus carriers. The local penicillin therapy of diphtheria patients and of carriers resulted in a noticeable shortening of the period of isolation: freedom from bacilli was achieved within thirty days in 71 per cent of the patients, whereas this occurred in only 25 per cent before penicillin was used. Penicillin therapy is given in addition to serum therapy, not in place of it. In the severest cases penicillin can be given also parenterally.

Sedimentation Rate of Erythrocytes Following Injection of Own Blood.—Ruge points out that the erythrocyte sedimentation rate, which is determined by the amount of coarse disperse colloids in the blood, shows certain fluctuations, depending on the tissue destruction and the rapidity of transition into the blood stream. Injection of a person's own blood (autohemotherapy) increases the permeability of the capillary endothelium and facilitates the exchange of tissue and blood colloids. In healthy subjects the fluctuation caused by autohemotherapy never exceeds 20 per cent. Higher accelerations of sedimentation rates following autohemotherapy indicate that the colloid content of the tissue exceeds that of the blood. In this manner foci of infection can be disclosed. In infectious diseases the comparative sedimentation rates before and after injection of the person's own blood permits a more exact prognosis in that it can be learned whether the disease process is increasing or receding. Especially in articular rheumatism, tuberculosis and after carcinoma operations the comparative sedimentation rates permit a more exact prognosis than does the simple sedimentation reaction.

77:539-580 (May 24) 1947. Partial Index

Acute Phlegmon of Gastric Wall. E. Forster.—p. 541.
Natural and Artificial Radioactivity. E. Heller.—p. 542.
Pneumoradiography of Knee Joint. O. Häuptli.—p. 549.
Appendicitis and Pregnancy: Differential Diagnosis. A. Scharplatz. —p. 551.
*Diagnostic Value of Wohlgemuth's Reaction in Acute Pancreatitis. R. Weyeneth.—p. 552.
*Medical Prophylaxis of Silicosis. R. Stucki.—p. 554.
Importance of Retrograde Pyelography in Diagnosis of Paranephritic Abscess. H. Mäder.—p. 560.

Diagnostic Value of Wohlgemuth's Reaction in Acute Pancreatitis.—Most surgeons agree that when acute pancreatitis does not result in abscess formation it should be treated conservatively, since surgical intervention may make the prognosis even more unfavorable. If a patient complains of severe continuous pain in the upper part of the abdomen, chiefly on the left side, with possibly radiation to the left shoulder, if there are signs of shock with intestinal intoxication, if the vomit contains water and bile but no fecal material, if there are sweating and cyanosis of the extremities, small pulse, lowered blood pressure and hypothermia and if there is a history of biliary disturbances, acute pancreatitis should be thought of. The differential diagnosis must rule out cholelithiasis, ileus, gastrointestinal perforation, ruptured appendix, angina pectoris, mesenteric thrombosis and renal disorders on the left side. If these conditions have been ruled out and the determination of the diastase in the urine according to Wohlgemuth's method reveals increased values, the diagnosis of acute pancreatitis is almost certain. Since Wohlgemuth's test has a failure rate of about 20 per cent, it can be relied on only in connection with the clinical picture. The author also mentions the occurrence of hyperglycemia and excessive elimination of insulin in acute pancreatic disorders and stresses that in future these incretory disturbances should be watched for in addition to the urinary diastase values.

Medical Prophylaxis of Silicosis.—Stucki cites the high compensation payments for patients with silicosis as an indication of the seriousness of this problem in Switzerland. In 1945 compensation payments to persons with silicosis were more than eight times as high as for all other occupational diseases. A decree of the Swiss Federal Council concerning silicosis in miners and in men who blast tunnels has made medical prophylaxis of silicosis obligatory. The fact that men who blast tunnels never remain very long in the same vicinity makes continued observation difficult. For this reason the author emphasizes the necessity of a central organization for the prophylaxis of silicosis which could be arranged and supervised by the Swiss accident insurance organization.

Día Médico, Buenos Aires

19:729-772 (May 19) 1947. Partial Index

*Primary Cancer of Gallbladder. H. Larre.—p. 768.

Primary Cancer of Gallbladder.—Cancer of the gallbladder was associated with biliary lithiasis in 7 out of 9 cases reported. Clinical diagnosis was made too late for effective treatment. Cholecystectomy improves the prognosis if it is performed in the precancerous stage. Microscopic examination of frozen sections of the removed gallbladder should be routine. Removal of the gallbladder bed is necessary if cancer cells are found in the sections.

Medicina Latina, Havana

6:89-162 (March-April) 1947. Partial Index

*Diet in Therapy of Typhoid. M. A. Landa Bacallao.—p. 107.

Diet in Treatment of Typhoid.—Forty patients with typhoid were given a liberal, well balanced, mixed, high calory diet rich in vitamins and minerals. Two patients died. The febrile period varied between twenty and thirty days. Nervousness, mental symptoms and insufficient peripheral circulation, which frequently appear in the course of a liquid diet, did not appear in the course of this treatment. Hemorrhage occurred in only 1 patient. Transient recurrence was observed in 2 patients. Convalescence was shortened to one week in the majority. The nutritional condition after the disease was good. The results of treatment with a liberal diet are encouraging.

Minerva Medica, Turin

38:499-514 (May 26) 1947. Partial Index

Pathogenic Considerations on Shortening of Coagulation Time in Some Types of Hemorrhagiparous Hemopathy. N. Quattrin.—p. 499.
*Clinical, Roentgenologic and Histopathologic Contribution to Study of Pancoast Syndrome. G. Fregonara.—p. 504.

Pancoast Syndrome.—Fregonara reports 4 cases of Pancoast syndrome in men between the ages of 27 and 51. A primary tumor of the lung with metastases in the cervical lymph nodes was demonstrated on microscopic examination in 1 case, and clinical and x-ray observations were suggestive of primary cancer of the lung in 2 cases and of a secondary neoplasm with metastasis taking place from a previously removed tumor of the testicle in 1 case. All patients presented pain in the scapulohumeral region and in the lower cervical and upper dorsal regions. The entire Horner syndrome was present in 3 patients and partly in 1. Opacities were demonstrated on x-ray examination in the apexes of 3 patients. Skeletal changes of osteolytic type were present in the initial stage of the disease, and total destruction of the costal segments of the posterior wall in the final stage. Coutard's method of roentgen irradiation had only a temporary effect on the severe pain.

Semana Médica, Buenos Aires

54:453-492 (April 10) 1947. Partial Index

*Meningeal Hemorrhage: Was It Caused by Poliomyelitic Virus? A. Aubin, F. Albert and M. Blanco.—p. 473.

Meningeal Hemorrhage.—A normal child aged 4 years suddenly presented hemiplegia and symptoms of acute infection and of meningitis. The cerebrospinal fluid was hemorrhagic and did not contain tubercle bacilli The child got well but showed a poliomyelitis-like sequel in a leg. Aubin and his associates believe that essential meningeal hemorrhages are caused by a virus, the poliomyelitis virus in the reported case.

Deutsche medizinische Wochenschrift, Stuttgart

71:281-332 (Dec. 13) 1946. Partial Index

Active Hypnotic Exercises and Change of Hypnotic Technic. E. Kretschmer.—p. 281.
Action of Penicillin on Blood Picture J Lehmann.—p. 287.
Penicillin Therapy of Surgical Infections E. Bumm.—p. 291.
Rhesus Factor and Its Clinical Significance L. Heilmeyer.—p. 294.
Blood Group System Rh/rh as Cause of Disease. J. Bürgers and P. Dahr.—p. 296.
*Rh Factor and Blood Transfusion. Tischendorf.—p. 300.
*Hereditary Erythrocytic Factor Rh in Connection with Accumulated Unclarified Abortions, Stillbirths and Pregnancy Toxicoses, with Consideration of Its Significance in Erythroblastoses. A. Stadtmuller.—p. 302.
Artificial Production of Lactation. E. Lauset p. 304.
*Herpes Zoster Encephalitis. W. Schmidt p 308

72:1-48 (Jan. 17) 1947. Partial Index

New Treatment of Diffuse Toxic Goiter and of Hyperthyroidism with Thiouracil Derivatives. W. Hadorn and K Beer.—p. 1.
Present State of Chemotherapy of Bacterial Infections with Sulfonamides. G. Domagk.—p. 6.
Effect of Combination of Sulfonamides with Various Points of Attack (De-Ma) on Course of Sulfonamide Resistant Septic Aspects of Disease and Its Explanation by Concept of Multiple Blockage in Chain of Ferments. L. Heilmeyer and W. Kederling —p. 13.
Combating Thrombosis Rationally for Achieving Surgery Free of Embolism. E. Rehn.—p. 18.
Local Effect of Female Sex Hormones. H Runge —p. 25.
Study of Circulation in Man with Continuous Registration Methods. K. Matthes.—p. 28.

72:49-96 (Feb. 14) 1947. Partial Index

Aporrhea and Aporrheics: Contribution to Knowledge of Functional Destitution. W. Hellpach.—p. 49.
Sepsis and Its Manifestations. K. Bingold p 56
Hereditary Psychic Characteristics. H. W Gruhle.—p. 62.
Sulfonamide Treatment of Abortion Associated with Fever. K. J. Anselmino.—p. 63.
De-Ma Therapy of Puerperal Infections: Preliminary Report. P. Bernhard.—p. 66.
Present State of Chemotherapy of Bacterial Infections with Sulfonamides (concluded). G. Domagk.—p. 71.
Effect of Combination of Sulfonamides with Various Points of Attack (De-Ma) on Course of Sulfonamide Resistant Septic Aspects of Disease and Its Explanation by Concept of Multiple Blockage in Chain of Ferments. L. Heilmeyer and W. Kederling —p. 74.

Rh Factors and Blood Transfusion.—Tischendorf reports that complications developed in 3 patients after transfusion of Rh positive erythrocytes to Rh negative recipients. The first patient, a woman aged 41 with the typical signs of hemolytic spherocytic anemia, developed a severe hemolytic reaction following transfusion of 300 cc. of Rh positive blood. This woman had typical congenital hemolytic icterus, the hereditary character of which was proved by the fact that a brother had undergone splenectomy for the same condition. The complication following the blood transfusion became manifest as an alarming febrile hemolytic reaction with increase in anemia. It was the result of the action of the anti-Rh agglutinins of the Rh negative recipient on the Rh positive erythrocytes of the donor. The second patient, a woman aged 26, also had a typical hemolytic spherocytic anemia. The woman had had a subicterus five years previously, when hemolytic icterus had become manifest with the symptoms of cholelithiasis. Pregnancy complicated the icterus, and when the hemolytic anemia progressed following a blood transfusion (Rh factor of donor not determined) the pregnancy was interrupted. A resulting septic condition and the severity of the anemia required renewed blood transfusions. It was later found that the resulting hemolytic reactions resulted from the fact that the donors had been Rh positive, whereas the patient was Rh negative and moreover had Rh antibodies. The third patient, an Rh negative woman aged 31, had given birth to a child with erythroblastosis. Inadvertently the patient was given a transfusion of Rh positive blood, with fatal results.

Relation of Rh Factors to Abortions, Pregnancy Intoxications and Erythroblastoses.—Stadtmüller points out that abortions and stillbirths are frequently mentioned in the histories of families with erythroblastosis fetalis. He studied the Rh factor in women who had had repeated unexplained abortions or who had had pregnancy toxicoses. In 57 cases he was unable to corroborate the suspected causal connection. He thinks that for better clarification of the significance of the Rh factor it is advisable also to record negative observations.

Herpes Zoster Encephalitis.—Schmidt relates that a man aged 56, who had herpes zoster in the region supplied by the first branch of the trigeminus, died as a result of a simultaneously existing meningoencephalitis, which, however, had not been recognized. Drowsiness was one of the most noteworthy signs. In this respect the condition resembled Economo's lethargic encephalitis. The herpes zoster, like all other forms of virus encephalitis, is chiefly a polioencephalitis. The medulla and pons were most severely involved in the case under consideration. Further observations will be necessary to ascertain whether this localization of the inflammatory foci is typical for zoster encephalitis. The type of the microscopic changes is largely identical with those observed in other forms of virus encephalitis, particularly in those with epidemic encephalitis, except that the substantia nigra is less severely involved than in epidemic encephalitis.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

91:973-1048 (April 26) 1947

Pathologic Chemistry of Lipoid Nephrosis. S. van Creveld and P. H. Arons.—p. 985.
*A "Blackwater Fever House" in Batavia. Kho Lien Keng and Loe Ping Kian.—p. 994.
Penicillin in Treatment of Peritonitis. J. Kweckel.—p. 1004.
Autochthonous Malaria in Region Formerly Free From It. G. D. Hemmes and A. Punt.—p. 1007.

A Blackwater Fever House.—Kho Lien Keng and Loe Ping Kian report a blackwater fever house in which 12 members of a family were continuously exposed to malaria during the three and one-half years of Japanese occupation. One year after the beginning of this exposure the first case of blackwater fever occurred. In all, 8 persons suffered from blackwater fever once or repeatedly. During twenty years preceding this period these people had lived in a quarter of the town where there was but little malaria. In those years they had fever attacks only rarely and never blackwater fever. Blackwater fever was also absent during two years after the family had left the severely infected neighborhood. There was a definite relationship between the outbreak of blackwater fever and the frequency of the malarial attacks. The use of quinine seemingly had no decisive influence on the development of blackwater fever.

91:1049-1128 (May 3) 1947

Acute Laryngitis with Purulent Pericarditis and Pleural Empyema a Septic Syndrome Caused by Hemophilus Influenzae. A. van der Sar.—p. 1053.
*Thyrotoxic Crises During Treatment with Thiourea and Methylthiouracil. J. A. G. ten Berg.—p. 1060.
Pulmonary Abscess as Observed in Tuberculous Dispensaries. R. Drion.—p. 1069.
Simple Apparatus for Directing Nail in Fractures of Neck of Femur. N. G. Geelkerken and J. D. Bom.—p. 1075.

Thyrotoxic Crises During Treatment with Antithyroid Substances.—Three cases are reported by ten Berg in which the symptoms of toxic diffuse goiter or of hyperthyroidism became more severe at the onset of treatment with thiourea and methylthiouracil respectively. In 1 of the 3 cases a veritable crisis developed. These cases differ from the hundreds of cases in which preoperative treatment with thiouracil never resulted in a postoperative crisis. The author thinks that the aforementioned cases can be explained by the theory advanced by Mahaux about spontaneous and postoperative hypothyroid crises. Strictly executed treatment with methylthiouracil reduces the thyroxine content of the blood greatly. After the operation there is a great need for thyroxine, which results in a greater production of the substance stimulating thyroxine and in a stimulation of the diencephalon. The author mentions

2 other cases in which crisis developed following strumectomy for which the patients had been prepared by methylthiouracil medication and in whom the basal metabolism had decreased to less than normal.

91:1129-1208 (May 10) 1947

*Encephalitis After German Measles. H. Musaph.—p. 1141.
Choriomeningitis in the Netherlands. J. J. G. Prick and J. D. Verlinde. —p. 1146.
Acanthosis Nigricans. W. L. L. Carol.—p. 1157.
Sugar Determination in Blood. E. C. Noyons.—p. 1164.

Encephalitis After German Measles.—Musaph reports that a man aged 24, after repeated attacks of tonsillitis, contracted rubella when an epidemic prevailed in the neighborhood. Three days after the development of the rash the patient became acutely ill with symptoms of encephalitis. Within thirteen hours after the onset the threatening encephalitis symptoms disappeared. Half a year after this illness only the abdominal reflexes in the middle and lower segment on both sides could not be elicited. Reviewing the French and German literature on encephalitis after rubella, the author found records of only 9 cases. Of 187 patients hospitalized with a diagnosis of encephalitis since January 1916 only the 1 described here had rubella as the underlying cause.

Acta Chirurgica Scandinavica, Stockholm

95:291-386 (April 19) 1947. Partial Index

Case of Aseptic Necrosis of Patella. M. Brunk.—p. 291.
*Choledochal Denervation in Biliary Dyskinesia: Report of 15 Cases Studied by Induced Changes of Serum Amylase and Bilirubin (A Morphine-Secretin Test). H. Lagerlöf.—p. 297.
Cicatrizing Intestinal Tuberculosis and Allied Conditions. K. R. Inberg. —p. 306.
Varying Frequencies of Appendectomies on Basis of Indefinite or Incorrect Diagnosis of Acute Appendicitis in Annual Reports of Different Hospitals. G. Petren.—p. 327.
Avascular Necrosis of the Femoral Head After Central Dislocation Fracture of Hip Joint and After Isolated Fracture of the Greater Trochanter. S. Quist-Hanssen.—p. 347.
*Acute Interstitial Pancreatitis Provoked by Hemolytic Streptococci in Infected Food (Fish). O. Koller.—p. 358.
Normal and Pathologic Bone Growth in Light of Development of Cartilaginous Foci in Chondrodysplasia. A. Langenskiöld.—p. 367.

Choledochal Denervation in Biliary Dyskinesia.—Lagerlöf points out that in 1940 Reich suggested an operation to relieve the pain of biliary dyskinesia by sectioning nerves in the hepatoduodenal ligament. When patients with biliary dyskinesia following cholecystectomy and some patients with biliary colic in seemingly normal gallbladders were admitted to Lagerlöf's hospital, it was decided that Reich's operation might be justified in some who had daily or weekly attacks of biliary colic. Data are presented on 15 patients with dyskinesia following cholecystectomy who were subjected to choledochal denervation. The pain was relieved in 14 of these 15 patients. Simultaneous injections of morphine and secretin cause less pronounced rises of serum amylase and bilirubin following the choledochal denervation, which indicates that Oddi's sphincter contracted less strongly. Since the beneficial effect of the choledochal denervation as a rule did not last more than some weeks to months, it is probable that the nervous connections were restored. From a practical point of view it means that the operation is of little value and should be performed only when, on the suspicion of choledocholithiasis or pathologic process in the remnant of the cystic duct, the choledochus is explored and no pathologic changes are found.

Acute Interstitial Pancreatitis Caused by Hemolytic Streptococci in Foods.—Koller studied 2 patients with acute, interstitial, nonpurulent pancreatitis provoked by hemolytic streptococci and 1 patient with acute enterocolitis with a raised antistreptolysin titer. It appears that all 3 patients were members of the same household and had eaten of the same infected fish. The 2 patients with the pancreatitis died. The pathologic picture was identical with that of Zoepfel's pancreatitis edematosa and Elman's acute interstitial pancreatitis. The author stresses the need for careful bacteriologic examinations and recommends examination of the patient's feces and blood as a routine measure, as well as the determination of the antistreptolysin content of the blood. Positive bacteriologic findings should be an indication for chemotherapy.

Acta Medica Scandinavica, Stockholm

127:193-360 (April 25) 1947. Partial Index

Investigations of Some Biochemical Changes Occurring During Treatment of Hyperthyroidism. K. Lundbaek.—p. 193.
*Hyperthyroidism and Addisonian Pernicious Anemia. H. P. Mulder and W. J. Mulder.—p. 218.
Granulocytopenia and Hyperkeratosis in Plantae Pedis After Treatment with Hydantal (Methyldiphenyl Hydantoin). V. Gaustad.—p. 225.
Clinical Studies on Relative Incidence of Congenital Heart Disease. O. Thordarson.—p. 233.
*Average Diameter of Erythrocytes in Case of Emaciation in Times of War. M. Wilhelmij.—p. 274.
Bronchomoniliasis in Lymphogranulomatosis Benigna. L. E. Warfvinge. —p. 286.
Staphylococci in Throat and Nose and Antistaphylolysin Titer. T. Packalen and S. Bergqvist.—p. 291.

Hyperthyroidism and Pernicious Anemia.—After briefly reviewing the literature on the simultaneous occurrence of toxic diffuse goiter and pernicious anemia the Mulders present the histories of 2 women aged 27 and 56 in whom the two diseases were combined. In both patients the pernicious anemia disappeared following thyroidectomy.

Diameter of Erythrocytes in Emaciation During War.—Wilhelmij found that, in the Netherlands during the war, loss of weight was accompanied with an enlargement of the average diameter of the erythrocytes. This enlargement of the erythrocytic diameter decreased again when the weight increased.

Ann. Chirurgiae et Gynaecologiae Fenniae, Helsinki

36:1-76 (No. 1) 1947. Partial Index

Painless Delivery Under Caudal Anesthesia. S. Timonen.—p. 1.
Pelvic Neurinomas: Interesting Case. O. Heinivaara.—p. 17.
*Contribution to Study of the So-Called Glomus Tumors. L. Löfgren. —p. 25.
Results of Treatment of Carcinoma of Corpus Uteri in Woman's Clinic in Helsinki During Years from 1931 to 1946. V. Turtola.—p. 47.
Subcutaneous Injuries of Pancreas. V. Taivainen.—p. 63.

Glomus Tumors.—Löfgren says that, although the literature on glomus tumors has somewhat increased, this type of tumor is not sufficiently known. The earlier literature had applied various terms to the tumor, but Masson in 1924 showed that it arises from the "neuromyoarterial glomera"; hence the term glomus tumor. Reviews of cases collected from the literature indicate that the sex distribution is about equal. Localization under the nail and other digital locations is seen almost exclusively in female patients, whereas localization to other parts of the extremities is more usual in males. Glomus tumors occur in patients of all ages and usually appear singly. They develop slowly and are rarely larger than a pea. They are mostly small, bluish, elastic, extremely tender tumors. The slightest pressure from clothing may cause intense pain. Surgery is the only effective treatment. The author reports 3 cases of glomus tumor, in 2 of which the tumor was located on the lip; in the third it was on the finger.

Nordisk Medicin, Gothenburg

33:715-756 (March 21) 1947

Serum Proteins in Old Persons. J. Bock.—p. 715.

Hygiea

Scarification Treatment. G. Biörck, O. Göhle and C. Westman.—p. 739.
Ileus in Pregnancy. E. von Post.—p. 744.
*Cramps and Restless Legs in Acute Poliomyelitis. R. Luft and Ragnar Müller.—p. 748.

Cramps and Restless Legs in Acute Poliomyelitis.—Luft and Müller state that cramps in acute poliomyelitis seem not to have been previously reported in the literature. Of 32 patients (22 observed for one to two years, 10 for ten to twelve years) 15 had cramps localized in muscles affected during the acute stage of the disease. The occurrence of the cramps does not seem to depend on the degree of injury of the peripheral motor neuron. There is no relationship between the degree of paresis and the frequency and intensity of the cramps, which in most of the cases reported were constant during the time of observation. When cramps are especially troublesome, quinine gives good results. Of 18 patients in whom one or both legs were affected during the acute stage 3 (2 observed for ten years, 1 for one year) had restless legs with paresthesia usually in the lower part of the leg, sometimes in the thigh. Restless legs are ascribed to a vasomotor disorder.

Book Notices

War Stress and Neurotic Illness. By Abram Kardiner, M.D., Assistant Clinical Professor of Psychiatry, Columbia University, New York City. With the collaboration of Herbert Spiegel, M.D. Second edition of The Traumatic Neuroses of War. Cloth. Price, $4.50. Pp. 428. Paul B. Hoeber, Inc., 49 E. 33d St., New York 16, 1947.

This book is a restatement of Kardiner's earlier contribution to the study of traumatic neuroses originally entitled "The Traumatic Neuroses of War." The present edition contains an additional section concerning the acute phase of the war neuroses, written in collaboration with Herbert Spiegel. This section is an adequate, if incomplete, description of the emotional setting and of the psychologic and morale factors significant in the development of the war neuroses. There is no particularly new systematic approach in this part of the book; but, since it is based on the writer's own experiences in battle, it produces an authentic and vivid impact on the reader

The greater part of the book is devoted to the study of the chronic phase of the war neuroses. Kardiner makes much of the difference between the acute and the chronic phases. He adopts the rather unusual position that the acute phase of the illness can be understood only in the light of a thoroughgoing study of the chronic phase seen years after the onset of the illness. This is a rather unique criterion for the intelligible study of the disease process. The matter is usually considered to be quite the reverse. However, Kardiner has some notable contributions to make on the subject of psychopathology which he has elicited from the analysis of the chronic traumatic neuroses. His conceptual system is too unusual to be discussed briefly here. He prefers to substitute for the usual concepts of instinct and drive the "operation" concept of "action systems."

The action system concept represents a definite theoretical advantage from the point of view of studying the integrative mechanisms of the ego. However, the discussion is marred by Kardiner's insistence on a fundamental distinction between the traumatic neuroses and the transference neuroses. Such a sharp distinction cannot be maintained either on theoretical grounds or on the basis of Kardiner's actual clinical data. The effort to cling to this distinction gives the whole work a contentious, doctrinaire aspect which undermines the real value of the basic contribution. The work should actually be studied from the point of view of the application of the novel concepts set forth to our understanding of both the transference aspects and the traumatic aspects of all neuroses. From this point of view the book has great value in spite of its singular narrowness and incompleteness as a study of the neuroses of war.

Nutrition in Industry. International Labour Office, Studies and Reports, New Series No. 4. Boards. Price, $1.50; 6s. Pp 177, with illustrations. International Labour Office, Washington Branch, 734 Jackson Place, N.W., Washington 6, D. C., 3450 Drummond St., Montreal 25, 1946.

This is largely devoted to the activities and findings of government wartime feeding programs of Canada, the United States and Great Britain. The accounts reveal that industrial feeding programs, while not entirely new, were not adequate to meet properly the emergency occasioned by the war. One can say that each of the three governments found it necessary to overcome a weakness in national feeding. Consequently an international effort was made to influence the diets and eating habits of the vast numbers of workers required to produce the goods and munitions of war.

The publication contains a wealth of material on various governmental procedures, both general and special in nature, utilized in the three countries. It is enhanced with a number of photographs, charts and statistical data. Each of the three separate countries is given a definite section of the book. Part I is entitled "Nutrition in Canadian Industry," part II "The Wartime Food and Nutrition Program for Industrial Workers in the United States" and part III "Industrial Canteens in Great Britain." A brief introduction has been prepared by Dr. Frank G. Boudreau, executive director, Milbank Memorial Fund, chairman, Food and Nutrition Board, and chairman, Committee on the Nutrition of Industrial Workers of the National Research Council. A table of contents also forms a part of this publication. There is no complete index of the book.

Each of the three separate sections contains a brief outline in which the separate contributors not only sum up the results of the wartime feeding program but also speculate regarding the lasting benefits to be achieved as a result of communal feeding, which was so highly developed in the great wartime plants and factories. The general opinion seems to be that a peacetime nutrition program effectively performing the functions as indicated in this report could greatly improve the health of the workers. However, it is pointed out that besides efficiently operated installations there are other problems of a social and economic nature closely interwoven with the whole problem of nutrition which must be solved by the proper agencies before malnutrition will disappear as a problem of major international concern.

White Caps: The Story of Nursing. By Victor Robinson, M.D., Professor of History of Medecine, Temple University School of Medicine, Philadelphia. Cloth. Price, $3.75. Pp. 425, with 21 illustrations. J. B. Lippincott Co., 227 S. Sixth St., Philadelphia 5, 1946.

This history of nursing is written in such a manner that it immediately catches the reader's interest. The frailties of human nature are not glossed over. The good and the bad are recorded. The reader, however, emerges at the completion of the volume with a picture of the profession developed through an acquaintanceship with the personalities of a considerable number of the builders of the profession. The struggle to build this profession is described as long and hard and intimately tied up with the history of woman. The story of the development of modern nursing from its beginnings in the training school for nurses at Saint Thomas's Hospital in London is told in a colorful and lucid manner. Although at first this volume may appear too long and detailed for use as a textbook in nursing schools, the respect which it creates for a growing profession, and the devotion to the service of mankind which it so ably portrays, should commend it. The final section, entitled "March of the Nurses," provides a chronological table of events and biographies which serves to reemphasize and relate in concise form the main landmarks of nursing history.

Gynecology and Obstetrical Pathology with Clinical and Endocrine Relations. By Emil Novak, A.B., M.D., D.Sc., Associate in Gynecology, The Johns Hopkins Medical School, Baltimore. Second edition. Cloth. Price, $7.50. Pp. 570, with 512 illustrations. W. B. Saunders Co., W. Washington Square, Philadelphia 5, 1947.

The second edition of this excellent book is indeed welcome at this time. The introduction of the first edition provided students and practitioners with an authoritative textbook on gynecologic and obstetric pathology which has had wide acclaim. The author has worked and taught in this special field throughout his professional career. His wide experience and the abundance of material available in his laboratory are manifested in the contents of this volume. Furthermore, he has the rare ability of telling his story in simple, concise and clear language, which adds considerably to the value of this textbook. The present edition has more than a hundred new illustrations, many colored, which add much to the descriptions. The text and references have been brought up to date. This edition, like its predecessor, can be recommended to students and practitioners interested in gynecologic and obstetric pathology.

Dynamische Reaktionspathologie: Die Überwindung der medizinischen Grundlagenkrise durch die moderne Physik und Biologie, Entwicklung und Ziele einer eigengesetzlichen Medizin und ihre Auswirkung in Forschung, Praxis und Gesundheitspflege. Von K. v. Neergaard, Professor an der Universität Zürich, Zürich. Cloth. Price, 24 Swiss francs. Pp. 317, with 26 illustrations. Benno Schwabe & Co., Klosterberg 27, Basel 10, 1946.

"The real crisis is a struggle for a new conception of science." Medicine cannot stand on the basis of classic natural science any longer without becoming scholastic. Modern physics has fundamentally changed the old forms of thinking. Under the influence of classic science the conception of substance combined with the three dimensional conception of space leads to the question of the site of disease. Now we have a space-time unity, a four dimensional image of the world. According to the gestalt theory it is hopeless to try to understand the whole by way of the analysis of its elements. Physics and chemistry are sciences of the elements: the problem of biology is the whole system. Holism teaches that the processes of life cannot be understood from the mechanistic, physicochemical side, i. e. from the next lower phase. The whole is logically superior to its members.

Much more important than the morphologic form is the functional side, the dynamic equilibrium between the whole and its parts. Pathologic processes cannot be explained by disturbed normal physiology; something new occurs, the pathologic reaction. The readiness for a reaction is what matters most. The same factors may produce quite different pathologic conditions. These new facts cannot be understood from physiology or normal anatomy. This is decisive for the position of medicine as an independent field of research.

Modern milieu biology is interested in the active reaction to outside influences of the organism and does not see the organism as isolated from the milieu. It leads to medical sociology; a community is more than and quite different from a sum of individuals. Here too we see a gestalt-like structure. Diagnosis must be developed into a diagnosis of reactions. This is the basis of active treatment, which mobilizes the defensive powers of the organism. Healing is not directed to passive developments only but to active processes also. The laws of pathology are more general than those of physiology. This is expressed by the name "autonomic medicine." The understanding of the disease as a historical process is best expressed by the term "dynamic reaction pathology."

This is a summary and necessarily incomplete review of a book which is full of interesting ideas and stimulates the reader to think over the problems which medicine faces in our days. However, its somewhat alarming title is not fully justified. For decades we have heard about the "crisis" of modern medicine, and more than one book has been written in order to avoid or overcome it. In the meantime we have seen a progressive development in medical thought and practice, which can hardly be much promoted by programmatic declarations even though these are based on a profound knowledge of medicine, science and history such as the writer of this book possesses. In medicine more than in most other sciences progress can, at least to a great part, be measured by practical results.

Eye Surgery. By H. B. Stallard, M.B.E., M.D., F.R.C.S., Assistant Eye Surgeon, St. Bartholomew's Hospital, London. Cloth. Price, $11. Pp. 444, with 338 illustrations. William Wood & Co., Mt. Royal & Guilford Aves., Baltimore 2; John Wright & Sons, Ltd., 28 Orchard St., Bristol 1, England, 1946.

This book was written and illustrated by the author himself, without access to ophthalmic literature, while at sea, in military transports and in army camps. It is not a rehash of the often conflicting views of many authorities, but the reader is given the results of one man's observations and the methods he has used to cope with the many and manifold surgical problems presented by the eye and its adnexa. The author is a man of wide experience both in civil and in military fields, and his theories and results are related in this volume.

The introductory chapter contains useful instructions for the ophthalmic surgeon and his assistant and also deals with a description of layout and care of instruments, and preoperative and postoperative care of patients. A chapter on anesthesia and analgesia follows and then some 130 pages concerned mainly with plastic surgery of the eyelids. Reconstructive surgery for war injuries is covered in considerable detail. The remaining chapters of the book deal with the lacrimal apparatus, the extraocular muscles, the conjunctiva, cornea, anterior chamber and sclera, the iris, the lens, glaucoma, the retina, choroid and vitreous, traumatic surgery and the orbit. Each operation is preceded by a list of the instruments required and an account of the method employed for producing anesthesia or analgesia. This entails considerable repetition and contains only those operations which the author himself favors and practices. Some original matter consists of a description of the author's methods of extraction of intraocular foreign bodies by the posterior route, of implantation of radon seeds far back on the eye for intraocular neoplasm and his corneoscleral stitch in cataract operation. The chapter on the orbit contains much useful information, and an excellent description of a modified Kronlein operation.

The book is characterized by a lucidity of description, attention to detail and incorporation of valuable material not previously obtainable in book form. The reader, given reasonable experience in ophthalmic surgery, should be able to perform any of the operations described even if he has not had the opportunity to see them done by others. The work can be considered an authoritative English book on ophthalmic surgery and should be of considerable value to American ophthalmologists.

Pain in the Distribution-Area of the 4:th Lumbar Root: A Study of Pain Interpreted as Referred Pain and as Caused by Direct Irritation of the Nerve-Root. By Gösta von Reis. Acta psychiatrica et neurologica, Supplementum XXXVI. Paper. Pp. 135, with 30 illustrations. Stockholm, 1945

Pain within the area of the fourth lumbar root has been studied and interpreted partly as referred pain (in arthrosis deformans coxae) and partly as caused by direct disorder of the root (in disk herniation and osteoarthritic disorders in the spine). In 6 cases with pain similar to arthrosis deformans coxae the question of the cause of pain is undetermined.

Analyses of muscle tenderness, spontaneous pain and experimental irritation together with experimental anesthetizing of hip joints indicate that the pain in arthrosis deformans coxae can be interpreted as referred pain within, chiefly the area of the fourth lumbar root.

Rhizotomy of the fourth lumbar root in pain interpreted as referred pain within chiefly the distribution area of this root gave relief from pain in 12 of 14 cases. The pain is prone to recur. After an observation period of fourteen months there were satisfactory results in 6 of 14 operative cases.

Rhizotomy of the fourth lumbar root in cases with pain within the distribution area of this root gave, in 6 cases of pain of doubtful origin, freedom from pain in 4 cases during an observation period of respectively sixteen, twenty-two, twenty-four and twenty-four months. In a further case there was, after an observation period of twenty-three months, a result which was satisfactory from a practical point of view.

Section of the third and fourth lumbar sensory roots in conditions of pain caused by arthrosis deformans coxae resulted in a satisfactory condition in 9 of 18 operative cases after an observation period of nine months.

Sources of error in rhizotomy are discussed.

In about half of the number of cases with pain caused by arthrosis deformans coxae there existed a depression of the patellar reflex or the achilles reflex or both. Observations after sectioning the root speak in favor of the afferent impulses of the patellar reflex traveling via the third and fourth lumbar sensory roots. In about half of the cases conduction travels via the fourth lumbar sensory root alone.

After section of the fourth lumbar root, a diminution of the superficial sensitivity to pain is considered the rule (7 cases of 10). Section of the third and fourth lumbar sensory roots produced in all the cases (18) a diminution of the superficial sensitivity to pain.

The lumbar core dermatome of the superficial sensitivity to pain has been studied after eighteen sections of the fourth lumbar root. The area of diminution of the superficial sensitivity to pain has been considered characteristic of the core dermatome of the fourth lumbar root and has been compared with previously mentioned dermatomes associated with the fourth lumbar root.

A History of Nursing. By Gladys Sellew, Ph.D., R.N., Director, Department of Nursing, The College of St. Catherine, St. Paul, Minn., and C. J. Nuesse, Ph.D. Fabrikoid. Price, $3.75. Pp. 444 with illustrations. C. V. Mosby Co., 3207 Washington Blvd., St. Louis 3, 1946.

This textbook is a well organized and presented history of nursing. A sincere attempt has been made to correlate the development of nursing throughout the ages with the development of mankind and his consciousness of health and disease. Each chapter is carefully subtitled and is completed by study questions and a suggested reading list. The volume provides a considerable amount of medical and sociologic background related to each period of nursing history. The style and type of organization of the book are similar to those of many high school textbooks. However, there is a wealth of material which is readily available to the more mature student.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST

EFFECT OF AMPUTATION OF THE CERVIX ON CONDUCT OF LABOR

To the Editor:—Information is requested concerning the conduct of labor following Sturmdorf's operation on the cervix. Please cite data bearing on uterine rupture, premature delivery and the need for cesarean section, if any. M.D., Texas.

ANSWER.—Contrary to former ideas, Danforth has pointed out that the cervix is largely fibrous tissue containing few muscle cells. Partial removal of this structure need not interfere with the normal labor mechanism If a portion of the cervix remains and there is little scar tissue present the cervix may undergo normal effacement and dilatation. However, when the cervical amputation has been sufficiently complete so that no vaginal portion is present, labor is less likely to pursue a normal course. Furthermore, premature delivery is a fairly common occurrence following high cervical amputation.

The conduct of labor in a patient who has had an operation on the cervix should be conservative but the prognosis guarded. In the absence of any other contraindication to delivery through the pelvis the patient should be allowed to go into labor and the course followed intelligently. If effacement and dilatation proceed normally, delivery from below can be expected. On the other hand, if after a good test of labor the cervix fails to dilate normally, cesarean section should be considered. Previous plastic surgery for the correction of cystocele and rectocele in addition to cervical amputation should be considered sufficient indication for an elective cesarean section Spontaneous rupture of the uterus is a rare sequela following surgery of the cervix.

BLOOD SEDIMENTATION RATE IN SYPHILIS

To the Editor:—Will you kindly tell me the effect of syphilis in its different stages on the erythrocyte sedimentation rate? Victor F Woolf, M.D., New York.

ANSWER.—The erythrocyte sedimentation rate is a nonspecific reaction comparable to the body temperature and leukocyte count in that it gives information of a general character. In syphilis, as in certain other chronic infections, it is a gross measure of the extent and activity of the morbid process. The sedimentation rate may be increased in primary syphilis even before the blood serologic test becomes positive. The highest readings occur in association with florid secondary manifestations. In late syphilis erythrocyte sedimentation is rarely increased in the absence of overt clinical lesions. Following antisyphilitic therapy the sedimentation rate falls and is normal in patients who have been adequately treated.

The sedimentation rate does not have diagnostic value in syphilis except as it may call attention to a more or less occult clinical condition. In following the course of syphilitic infection and assessing the response to antisyphilitic therapy, the quantitative serologic test is a specific and far more reliable index of clinical activity.

PROTRUDED INTERVERTEBRAL DISK AND PREGNANCY

To the Editor:—A white woman aged 27 developed a severe unilateral sciatica after delivery of her second baby. This was believed due to a partially ruptured intervertebral disk and spontaneous recovery occurred about a year and a half after the delivery. What is the probability of recurrence of a similar episode with another pregnancy? What preventive measures might be taken? Herbert G. Barber, M.D., Sells, Ariz.

ANSWER.—If the labor was not extremely difficult and forceps were not used, the sciatica is probably the result of a partially ruptured intervertebral disk. If, in the future, labors are not difficult there is less probability of the recurrence of symptoms. One of the characteristics of protruded intervertebral disk is the intermittence of symptoms.

The preventive measures to be taken are (1) avoidance of stooping, lifting or straining, (2) wearing of a lumbosacral support and a good maternity corset during pregnancy and (3) removal of the disk.

EFFECT OF LOW TEMPERATURES ON REACTIONS OF BLOOD

To the Editor:—In view of the difficulty in heating our buildings, I have been concerned about certain reactions that have connected themselves in my mind with low temperatures. I should like to have an explanation and advice with reference to them. 1. The coagulation time of the blood is reported as 10 minutes by one laboratory and 20 minutes (at temperature at 11 C.) by another laboratory. The first laboratory insists that 10 minutes normal for the conditions of temperature under which the test was made. 2. Prolonged bleeding time has been observed in that bleeding did not cease from the lobe of the ear,where a prick had been made for hemoglobin estimation, for a period of fifteen minutes, which, in the instance in view, coincided with the time it took the patient to get to a properly warmed room. 3. When the blood was centrifuged with view to separating the serum for a Kahn test, the serum solidified. (The temperature was not freezing.) 4. In giving a transfusion in a room which was inadequately heated, the citrated blood clotted and could not be transfused. Was this due to suppressed chemical ionization and reaction with the sodium citrate? Can this be forestalled in the absence of heating facilities? 5. Can blood typing and blood matching under these conditions of temperature be considered reliable? 6. Are there changes in the composition of the blood of sufficient moment to account for any of the phenomena mentioned on the basis of the individuals concerned living in a constantly cold temperature? M.D., China.

ANSWER.—The inquiry regarding the effect of temperatures on coagulation of blood is most interesting. However, there is not enough information regarding the procedures that were followed. With the insufficient data specific conclusions cannot be ventured nor can anything but general advice be offered.

1. The coagulation time of blood is normally increased with temperature lower than that usually considered as normal room temperature. At a temperature of 11 C. the coagulation time determined by the Lee and White method could easily be as much as twenty minutes. It is assumed that a test tube method with properly cleaned glassware is the one under consideration. It would be advisable, if at all possible, to carry out coagulation tests in a water bath at 37 C. immediately after withdrawal of the blood and placing it in a tube which should be previously warmed to 37 C.

2. Bleeding time is prolonged in cold temperatures paralleling the coagulation time. If it is not possible to carry the test out in a warm room, the standard time should be determined under the conditions of the test.

3. Blood for a Kahn test should be given a preliminary prolonged centrifugation and then further centrifugation after separation of the clot from the side of the tube. In other words, all fibrin should be formed from the fibrinogen before an attempt is made to remove the serum. In fact, if the tubes were allowed to stand until the retraction of the clot is complete, the serum would be more suitable for serologic procedures.

4. The data given are insufficient to explain the clotting of the citrated blood. This should not occur if proper mixture with the anticoagulant is carried out.

5. Blood typing and blood mixing should be reliable under the conditions of temperature mentioned. In fact they may be more reliable than at higher temperatures. However, there may be considerable difficulty in misleading results due to "cold agglutinins." Here again it would be advisable to use some sort of water bath, maintained at 37 C., to clarify any confusion that might be caused by abnormal agglutinins.

6. It is not possible to answer this question. It could be a subject for real clinical investigation, but most careful controls would be required before any conclusions could be drawn.

SPONTANEOUS CURE OF SYPHILIS

To the Editor:—What percentage of people contracting syphilis become spontaneously cured without any treatment? Have there been any well controlled studies on this question? Dean C. Austin, M.D., Brookings, S. D.

ANSWER.—The only first class study which deals with the spontaneous curability of syphilis is that of Bruusgaard, E.: Ueber das Schicksal der nicht spezifisch behandelten Luetiker, *Arch. f. dermat. u. syph.* **157:**309, 1929. This article has been further analyzed from the biostatistical point of view by Sowder, W. T.: Interpretation of Bruusgaard's Paper on the Fate of Untreated Syphilis, *Am. J. Syph., Gonor. & Ven. Dis.* **24:**684 (Nov.) 1940. A still further discussion of the matter may be found in chapter III, on the prognosis of syphilis, in the monograph by Moore, J. E.: The Modern Treatment of Syphilis, ed. 2, Springfield, Ill., C. C Thomas.

The available evidence suggests that about 25 per cent of persons contracting syphilis become spontaneously cured without any treatment and that another 25 per cent achieve complete latency (though remaining seropositive in the blood), living to a ripe old age and dying of something else.

COURSE AND FUNCTIONS OF SYMPATHETIC NERVE FIBERS AROUND HEART AND LARGE BLOOD VESSELS

To the Editor:—I am a general practitioner with a country practice, and only a meager portion of the medical literature is available to me for reference. I have a particular reason for being interested in obtaining the best information available in regard to any autonomic supply that might originate from the aortic plexus and/or the cardiac plexus and accompany the innominate, the left common carotid and left subclavian arteries as they leave the aorta. I think it is established that both vertebral arteries have a large autonomic accompaniment the origin of which is from the lower cervical and upper thoracic sympathetic ganglions, and of course the carotids high in the neck are joined by, and accompanied upward, by a large autonomic supply from the superior cervical ganglions. The thought has occurred to me that autonomic fibers from the larger plexuses of the aorta and possibly of the heart might accompany the vessels first mentioned at their origin from the aorta. I have tried to ascertain the truth or fallacy of this deduction by referring to the literature available to me without success.

D. C. Simmons, M.D., Kilgore, Texas.

Answer.—All the great vessels arising from the aortic arch are accompanied with vasomotor fibers of the sympathetic component of the autonomic nervous system. Such fibers form plexuses which invest the subclavian, carotid, vertebral and internal mammary arteries as well as the thyrocervical and the costocervical trunks.

Functionally these periarterial plexuses are primarily concerned with control of vascular tonus and therefore of the diameter of major arteries and their branches. Some fibers innervate glands and smooth muscle in the skin. The subclavian plexus of sympathetic fibers, for instance, continues along the axillary and brachial arteries and through their terminal branches may extend to the skin of the superior extremity (to arrector pili muscles and to sweat glands). The sympathetic fibers accompanying the thyrocervical trunk extend to the thyroid gland along the inferior thyroid artery.

Most of the sympathetic fibers that form the periarterial plexuses in question are of the postganglionic, unmyelinated type. They originate mainly in the inferior cervical ganglion or, if the latter is fused with the first thoracic sympathetic ganglion, in the stellate ganglion.

There is no evidence that any of these plexuses are functionally dependent on the cardiac or on the aortic plexus of thoracic levels. The two cardiac plexuses (superficial and deep) are terminal for the heart and the lungs through their extensions along the coronary and the pulmonary arteries. The periaortic plexus in the thorax is less extensive than that of the abdominal aorta. There are no large, unpaired visceral arteries coming off the thoracic descending aorta. The visceral outflow of the thoracic sympathetic trunks, therefore, streams less into a thoracic periaortic plexus than into the splanchnic nerves that pierce the diaphragm and supply the celiac plexus.

Vasomotor fibers of the periarterial plexuses (subclavian, internal mammary and so on) are by no means the sole source of sympathetic innervation of the superior extremity or of thoracic skin. Many postganglionic, unmyelinated fibers reach these regions through gray communicating rami from the lower cervical and upper thoracic sympathetic trunks. These gray rami connect the sympathetic trunks with the roots of the brachial plexus and with thoracic spinal (intercostal) nerves. A great deal of visceral efferent, sympathetic outflow, therefore, occurs through the respective spinal nerves by an admixture of unmyelinated fibers. They follow mainly the distribution of sensory nerves and thereby reach the vessels of the subcutis and the skin. There is evidence that recovery from fatigue of striated muscle is also influenced by sympathetic stimuli.

Some reports indicate that periarterial sympathectomy produces only temporary vascular symptoms followed by normal vascular tonus. The dual course and supply of sympathetic fibers to the arm would explain such results.

THE ODOR FROM ILEOSTOMIES

To the Editor:—A patient of mine who carries a permanent ileostomy complains of persistent and disagreeable odors. Is there any medication that would help me eliminate this condition?

Charles M. Robbins, M.D., Newark, N. J.

Answer.—Many patients complain a great deal about the malodor from colostomies and ileostomies. The administration of charcoal frequently is sufficient to decrease the odor. This acts simply as an absorbent and should be administered in doses sufficient to control the odor. Another substance which is of value is kerol 3 minims (0.18 cc.) administered in a capsule once daily before breakfast.

PAIN IN RIGHT UPPER ARM

To the Editor:—Information is requested to assist in alleviating pain located deep in the right upper arm at the level of the insertion of the deltoid muscle. The patient is a white woman aged 27 with a history of direct trauma to the right arm three years ago. There have been intermittent deep seated pains lasting a day or two during this time. Since December 1946, however, the pain has been almost constant and aggravated by motion. X-rays of the shoulder, humerus and elbow are completely normal. Diathermy, infra-red and other methods of physical therapy such as massage have likewise been of no help. Moderately large doses of B complex were administered parenterally without effect. Aspirin compound with and without codeine have not eased the distress. The patient states that the pain feels as though it was within the bone itself. I have felt that this was largely a psychosomatic problem but I am writing to see if this may not represent some syndrome.

M.D., Connecticut.

Answer.—This patient probably has one of four conditions: (1) calcified deltoid bursa, (2) neuritis of the axillary nerve, (3) brachial neuritis, (4) functional nervous disorder. It is suggested that a complete neurologic examination be made to rule out these conditions. If objective evidence of organic disease is not found the patient should have a psychiatric examination.

DETERMINATION OF PROTHROMBIN TIME

To the Editor:—Has any work been done on the duration of prothrombin time studies on plasma? That is, for how long a time can plasma prothrombin time studies be delayed and yet be reliable? Will plasma prothrombin time be reliable if done after one or two days from the time of the drawing of the plasma?

Harry W. Orris, M.D., Bronx, N. Y.

Answer.—For an accurate determination of prothrombin time, the test should be done within three or four hours after the blood is drawn. In twenty-four hours the prothrombin activity is often reduced 50 per cent even when the blood is stored in a refrigerator. The loss of prothrombin activity according to A. J. Quick (On the Constitution of Prothrombin, *Am. J. Physiol.* **140**:212 [Nov.] 1943) is due to a destruction of component A of prothrombin by oxidation. This can be minimized by keeping the blood cold and covering it with a layer of liquid petrolatum.

ANORCHIDISM

To the Editor:—While operating for a right undescended testis, I was unable to find either the testis or any of its appendages. The retroperitoneal area up to the kidney and medially into the rectovesical septum was explored without finding any testis. There was no evidence of any spermatic vessels. Is it possible that the patient was born with only one testis, the left, which was of a size greater than would be expected in a 13 year old boy? Or was the testis present but in some ectopic position eluding exposure?

M.D., New York.

Answer.—From the evidence submitted it would appear the patient has only one testis. This is especially likely since the retroperitoneal area up to the kidney and medially into the rectovesical septum was explored. This condition is known as anorchidism, which at one time was considered rare but which recent observations prove to be not infrequent.

TENDENCY TO CONGENITAL MALFORMATIONS

To the Editor:—A married woman aged 26 was recently delivered of her second child within a fourteen months period. Each infant lived approximately thirty-six hours and died of a congenital heart defect (proved by necropsy). The first pregnancy was accompanied with a moderate amount of nausea and vomiting, the second with much less. Each pregnancy was essentially normal, although each child was carried beyond the estimated date of delivery (one month and two weeks respectively). All laboratory studies were normal (blood count, urinalysis), blood Wassermann negative and Rh factor positive. The patient took antepartum medication of small doses of thyroid, iron, calcium and vitamin D. The questions brought up by the patient are what are the chances of having a normal baby? Can there be any kind of chemical or other incompatibility between the tissues of the wife and the tissues of the husband, and if so, how can it be determined? The family history is negative for any kind of abnormality on either side. The patient will soon try a third pregnancy unless a definite contraindication or likelihood of a poor prognosis exists.

M.D., Pennsylvania.

Answer.—Statistically there is an increased hazard for a patient like this to give birth to another baby with some gross malformation. However, the hazard is not sufficiently great to advise against future pregnancies. It is entirely possible that future children will be normal.

There is no scientific evidence that chemical or other incompatibilities between husband and wife exist.

The Journal of the
American Medical Association

Published Under the Auspices of the Board of Trustees

Vol. 135, No. 3 | Chicago, Illinois | September 20, 1947

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IDIOSYNCRASY TO DRUGS

Chairman's Address

CARL A. DRAGSTEDT, M.D., Ph.D.
Chicago

In 1822 Paris[1] wrote as follows:

> *Constitutional peculiarities, or idiosyncrasies, will sometimes* render the operation of the mildest medicine poisonous. . . . I have seen a general erysipelas follow the application of a blister, and tormina of the bowels, no less severe than those produced by the ingestion of arsenic, attend the operation of purgatives composed of senna. In some constitutions antimony has been known to produce a ptyalism; Dr. James assured Sir George Baker that he knew 6 instances of it, although the patients thus affected had neither their teeth loosened nor their breath made offensive. The peculiar susceptibility of certain individuals to the effects of particular plants is also very singular. Murray relates that unpleasant symptoms have been experienced by merely keeping aconite for some times in the hand, or on the bosom. I am acquainted with 2 persons in whom the odour of Ipecacuan always produces a most distressing dyspnea: there are some idiosyncrasies so singular and incredible, that nothing but unimpeachable testimony could sanction our belief in their existence.

In 1843 Pereira[2] wrote as follows:

> Idiosyncrasy. Under this denomination are included these peculiarities which affect the functions of organs, without having any obvious relation to development, and which are not common to a number of individuals. Its effect in modifying the effects of medicines is, in general, to increase their activity. Thus, some individuals are peculiarly susceptible to the action of opium, some of mercury, and others of alcohol. The odour of ipecacuanha will, in certain persons, produce short and difficult respiration, approaching almost to a paroxysm of asthma. The late Mr. Haden has related a case in which two drachms and a-half of Tincture of Colchicum produced death: the mother of the patient was also exceedingly susceptible of the action of colchicum even in small doses. In some instances the effect of idiosyncrasy is to diminish the activity of the medicines. Thus some persons are exceedingly insusceptible of the action of mercury.

It is clear that the early writers used the term idiosyncrasy to imply an abnormal response to drugs and that they recognized that this abnormality could be either quantitative or qualitative. While a quantitative variability in susceptibility to drugs has had casual recognition for centuries, it received little serious study until the last two decades. Recent studies have shown that when due account is taken of all the tangible factors, such as age and weight, which might alter the susceptibility to drugs, there still remains a characteristic and rather wide normal variability in the quantitative response to drugs. Pharmacologists now take cognizance of this by the use of such terms as ED_{50}, ED_{99} and ED_1, signifying by the first the average dose of a drug which is effective in 50 per cent of the population and using the latter two terms to give expression to the range of variability by indicating the doses which are correspondingly effective in 99 per cent and 1 per cent of the population. Where the data are available, such figures would give expression to the normal range of quantitative variability and one should require variations beyond these extremes before calling them abnormal. Persons showing susceptibilities at or beyond these extremes could be called tolerant on the one hand and hypersensitive on the other, and it would seem wise to strive for precision of meaning by using the term hypersensitiveness only in the quantitative sense. The quantitative variability in the response to drugs was the subject[3] of the Chairman's Address in 1939 and will not be dealt with further here, except to say that it has not been particularly disturbing in clinical practice and, as far as I am aware, has seldom precluded the use of any drug. Largely because of this fact, the term idiosyncrasy has come to have the narrower meaning of a qualitative abnormality in the response to drugs, signifying such effects as urticaria, neuritis, jaundice, anemia, leukopenia and the like, which some drugs produce in some persons but do not produce in the majority, irrespective of the dose employed. In the very definition of idiosyncrasy, then, physicians are confronted with two aspects of the problem: what persons? and what drugs? With respect to the former, practitioners today do not appear to know much more than did their prototypes of one hundred years ago. Whether idiosyncrasy is due to a constitutional defect, unchangeable and incurable, or to a transitory state brought about by disease or nutritional deficiency is not understood. The statement is commonly made that some 10 per cent of the population have an inherited predisposition to the allergic diseases caused by foods, inhalants and similar environmental agents. Is this the same fraction of the population that shows idiosyncrasy to drugs? This question should have a decisive answer, but I can find little beyond scattered reports of idiosyncrasy to drugs observed in persons with or without history of allergy in self or family on which to base a definitive answer to this question. Furthermore, even if the answer to this question were in the affirmative, it would not have advanced the understanding of the fundamental nature of this constitutional element to any notable extent, because there is no satisfactory explanation as to why some people become allergic and others do not. The possible kinship of drug idiosyn-

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From Northwestern University Medical School.

Read before the Section on Experimental Medicine and Therapeutics at the Ninety-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., June 12, 1947.

[1] Paris, J. A.: Pharmacologia of the History of Medicinal Substances, New York, F. and R. Lockwood, 1822.

[2] Pereira, J.: The Elements of Materia Medica and Therapeutics, ed. 2, Philadelphia, Lea & Blanchard, 1843.

[3] Nelson, E. E.: Variability in Response to Drugs, J. A. M. A. **113**: 1373-1375 (Oct. 7) 1939.

crasy to allergy, alluded to by this question, will be dealt with later.

With respect to the question, What drugs? investigators are about equally embarrassed for an answer. Experience has taught that idiosyncrasies to acetylsalicylic acid, aminopyrine, the organic arsenicals, the sulfonamide drugs, thiouracil, quinine and several others are considerably more frequent than those to alcohol, amphetamine, cascara sagrada, chloral hydrate, digitalis and the like, but there is little ground for any generalization that would have prophetic value as to the potentiality of idiosyncrasy for a hitherto unknown drug. It was for a time considered that aniline derivatives had a special predilection to idiosyncrasy, but I know of no substantial evidence to support this assumption, and the rather striking propensity for thiouracil and other nonaniline compounds to offend in this respect seems good reason to view it as inadequate. On the basis of the studies by Obermayer and Pick,[4] Wolff-Eisner,[5] Landsteiner and Chase[6] and others, it seems clear that certain drugs, by combining with body proteins to form antigenic conjugates to which the body may then become anaphylactically reactive, produce their untoward effect by this immunologic mechanism. But in many instances the occurrence of an idiosyncrasy to a drug is the only evidence one has that such an antigenic conjugate exists or can be produced, and there is no laboratory method by which this can be determined with certainty. Just as the physical examination of a patient usually fails to reveal anything informative as to the risk of idiosyncrasy on the part of a particular patient, so does the chemical examination of a drug usually fail to inform the physician of the potentiality that it may have. A representative of one of the drug firms told me, half in jest but half in earnest, that he was about ready to conclude that the most economical procedure with respect to a new drug would be to determine whether a large number of people could take it without untoward reactions before spending a lot of money in the laboratory and clinic to determine what it might do.

Consider the course of events attending the advent of a new drug. It is synthesized by the chemists. It undergoes various screening tests as to its actions and effects by the pharmacologists. Its toxicity is surveyed in some laboratory animals. It is distributed for controlled clinical investigation. It shows some therapeutic merit. It is released for general therapeutic trial and then—usually within three or four months—reports describing its unexpected and untoward reactions begin to appear. Was this not the story with dinitrophenol, the various sulfonamide compounds, penicillin, thiouracil, trimethadione ("tridione" N. N. R.) and many others? Meanwhile a furor of anxiety and expense ensues. The pharmaceutic manufacturer is called on to check and recheck the lot of drug with which the incident occurred to verify it as an idiosyncrasy rather than an accident, the physician has qualms as to his liability and the patient is distressed, if for no other reason than to learn that he is abnormal. This is obviously an unsatisfactory state of affairs begging for a solution. The medical profession has largely abandoned such drugs as dinitrophenol, aminopyrine and cinchophen in cases in which the therapeutic need does not warrant the therapeutic risk and has had its use of many other drugs definitely circumscribed.

To consider in more detail the character of idiosyncrasies, in the first place it should be agreed that some of the untoward or toxic manifestations that may attend the administration of a drug should not be considered as idiosyncrasies at all. For example, the urinary suppression that may occur with some of the sulfonamide drugs, and which is accounted for by their excretion and precipitation in the urine, is undoubtedly a toxic phenomenon which could be produced regularly if the proper precautions were not taken. The prothrombinopenia and hemorrhagic tendency which large doses of salicylate compounds may produce is another example of a normal toxic response that should not be called idiosyncrasy, even though it does not occur in every case in which the drug is administered. Secondly, it seems indisputable that there are a number of reactions to drugs which meet the various criteria characteristic of allergic reactions. Bronfenbrenner,[7] in a scholarly analysis of this problem, stated:

> These and other similar findings supply important evidence in favor of the view that the contact dermatitis type of response to nonantigenic substances need not be considered as a phenomenon apart from ordinary allergy. . . . Whatever the actual mechanism responsible for the sensitization with initially nonantigenic substances may be, it appears that, in the final analysis, in human beings as well as in animals the retention of chemicals in the tissues for a more or less prolonged period, as in the case of intracutaneous introduction, increases the likelihood of sensitization. Apparently local irritation with the following inflammatory tissue changes facilitates the formation of conjugates.

The untoward reactions to acetylsalicylic acid appear to be allergic in all instances, and a substantial number of the sulfonamide and penicillin reactions appear to be on an allergic basis. Thirdly, there are other types of idiosyncrasy in which the weight of evidence indicates that the reaction is not of an allergic nature. In a comprehensive review and analysis of the cases of jaundice, with or without acute yellow atrophy of the liver, attributed to various drugs, Ottenberg and Spiegel[8] concluded that the strict criteria of allergic sensitization were not satisfied. Also, a recent editorial[9] in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION summarizes the evidence incriminating cinchophen as an offending agent in this regard by concluding that the relationship of this drug to this condition is unproved and suggesting that the existence of an infectious hepatitis may well account for many of the reported incidents. To take some other examples, it has recently been shown[10] that dinitrophenol regularly produces cataracts in chickens and ducks, so that in these animals this reaction is a normal one and not entitled to the designation of idiosyncrasy. It seems highly probable from these observations that this toxic reaction is conditioned by the presence or absence of some factor which is usual in these animals but unusual in man. In this instance one has little hint as to what the conditioning factor may be. For other cases there are some hints. Succinyl sulfathiazole uniformly produces a granulocytopenia and anemia in rats.[11] This appears to be due to its inhibition of the intestinal bacteria which synthesize folic acid and thus indirectly to a folic acid deficiency, because the administration of adequate amounts of folic acid prevents the effect.[12] There is the suggestion from these observations that some of the drugs which produce granulocytopenia in man may do so by related mechanisms. I say this in spite of the fact that there are some disturbing observations difficult to harmonize with this concept. For example, Heilig and Visveswar[13] have reported the successful treatment of 2 cases of malignant leukopenia with sulfapyridine, which according to such a concept would be expected to intensify the process. Also, Newman and Jones[14] have reported that the prophylactic administration of folic acid in man failed to prevent an agranulocytosis by thiouracil. The observation[15] that ascorbic acid reduces the number of untoward reactions experienced with neoarsphenamine and oxophenarsine hydrochloride ("mapharsen" N. N. R.) suggests that most of these reactions are not of an allergic nature, because the best explanation for the action of ascorbic acid in this connection is that it reduces or prevents the oxidation of these compounds to toxic breakdown products. This also appears to be true for other organic acids.[16] Müller[17] has suggested that some cases of polyneuritis due to sulfonamide compounds may result from a purely toxic damage to the nerve tissues in the presence of predisposing factors such as achylia, thiamine deficiency or previous damage to the nervous system; Jorgensen and With[18] have reported some cases in which the disorder of pyrrole metabolism known as porphyria appears to have been the conditioning factor for untoward reactions to barbiturates. There is substantial reason to conclude, therefore, that a variety of drug idiosyncrasies may depend on various nonallergic factors, and it seems probable that some drugs may produce both allergic and nonallergic types of toxic reactions at the same time. There would seem to be some merit in an attempt to distinguish between these reactions, and to that end I would suggest the following provisional criteria:

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[4] Obermayer, F. and Pick, E. P.: Ueber die chemischen Grundlagen der Arteigenschaften der Eiweisskorper, Wien. klin. Wchnschr. **19:** 327-334 (March 22) 1906.

[5] Wolff-Eisner, A.: Ueber die Urticaria vom Standpunkt der neuen Erfahrungen über Empfindlichkeit gegenuber Korperfremden Eiweisssubstanzen, Dermat. Centralbl. **10:** 164-172 (March) 1907.

[6] Landsteiner, K., and Chase, N. W.: Studies on the Sensitization of Animals with Simple Chemical Compounds: IX. Skin Sensitization Induced by Injection of Conjugates, J. Exper. Med. **73:** 431-438 (March) 1941.

[7] Bronfenbrenner, J.: Is the Hypersensitiveness to Chemical and Physical Agents Allergic in Nature? J. Allergy **14:** 105-115 (Jan.) 1943.

[8] Ottenberg, R., and Spiegel, R.: The Present Status of Non-Obstructive Jaundice Due to Infectious and Chemical Agents, Medicine **22:** 27-71 (Feb.) 1943.

[9] Acute Yellow Atrophy of the Liver, editorial, J. A. M. A. **133:** 1156-1157 (April 12) 1947.

[10] Robbins, B. H.: Dinitrophenol Cataract: Production in an Experimental Animal, J. Pharmacol. & Exper. Therap. **80:** 264-268 (March) 1944.

1. An allergic basis seems to be indicated when the pattern of the toxic reaction is consistent with that of the allergic disorders produced by antigenic agents. This means that reactions characterized by urticaria, dermatitis, angioneurotic edema and asthma are probably allergic in character; that reactions characterized by jaundice, acute yellow atrophy of the liver and optic atrophy are probably not allergic, while granulocytopenia, anemia, thrombocytopenia and polyneuritis may well be one or the other.

2. An allergic basis seems to be indicated when a priming or sensitizing administration of the drug appears to be a factor in the history, while a nonallergic basis seems to be indicated when either long-continued administration or the use of substantial doses appears of major importance.

3. An allergic basis seems to be indicated when the untoward reactions are alleviated by epinephrine, diphenhydramine hydrochloride ("benadryl hydrochloride" N. N. R.) and similar agents, whose ameliorating effects are most reasonably interpreted on the basis of an antiallergic effect. A nonallergic basis seems to be indicated for those reactions which are alleviated by ascorbic acid, folic acid, thiamine and other agents whose ameliorating effect is not reasonably credited to an antiallergic effect.

As indicated, this outline of criteria for differentiating the allergic from the nonallergic reactions is only an improvisation which requires further study and amendment. But even when perfected such a classifying of reactions would become only an exercise in semantics unless it pointed the way to a solution of the two important aspects of this problem of idiosyncrasy, namely, the ability to forecast the likelihood of idiosyncrasy on the part of a given drug and the ability to control or treat the reactions that occur. With respect to the latter it seems clear that the general methods of preventing and treating allergic reactions would be different from those appropriate to the nonallergic responses. With respect to the former there are hints in the literature—and as yet they can be called little more than hints—that the propensity of a drug to produce untoward reactions in man might be determined by a more exacting study of its effects in experimental animals. Prolonged administration to monkeys might disclose a drug's tendency to produce optic atrophy;[19] administration to chickens, its tendency to produce peripheral neuritis[20] or cataracts;[19] administration to rats, its tendency to produce granulocytopenia,[11] and the appropriate administration to guinea pigs and rabbits, its tendency to provoke a dermatitis.[21] Perhaps with the aid of a complete menagerie the physician might learn to foretell all the possibilities.

I began this paper with some references to what was known about idiosyncrasy one hundred years ago. At this Centennial Celebration the members of the medical profession have been congratulating themselves with reviews and résumés of the marvelous accomplishments of this past century, but it is obvious from what has been said as to the tenuous nature of the current understanding of idiosyncrasies that this is one problem that has challenged physicians seriously and thwarted them shamefully. The reason for failure seems to me to have been indifference and neglect at coming to grips with the problem, largely because all have been buoyed with the hope that they could learn to evade it. The chemists have been seen to synthesize sulfonamide compounds that will do what sulfapyridine will do but with less risk of untoward reactions, to synthesize propyl thiouracil that will do what thiouracil does but with less risk, and so on, and it is somehow felt that the inex-

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F. S.; Sebrell, W. H., and Asburn, L. L.: of Agranulocytosis and Leukopenia in Rats or Succinyl Sulfathiazole in Purified Diets, Pub. Health Rep. **57:** 1559-1565 (Oct. 16) 1942.

[12] Daft, F. S., and Sebrell, W. H.: The Successful Treatment of Granulocytopenia and Leukopenia in Rats with Crystalline Folic Acid, Pub. Health Rep. **58:** 1542-1545 (Oct. 15) 1943.

[13] Heilig, R., and Visveswar, S. K.: Malignant Leukopenia Successfully Treated with Sulfapyridine, J. A. M. A. **122:** 591-594 (June 26) 1943.

[14] Newman, E. V., and Jones, B. F.: Agranulocytosis from Thiouracil Occurring During Prophylactic Treatment with Folic Acid, J. A. M. A. **132:** 77-78 (Sept. 14) 1946.

[15] Bundesen, H. N.; Aron, H. C. S.; Greenebaum, R. S.; Farmer, C. J., and Abt, A. F.: The Detoxifying Action of Vitamin C (Ascorbic Acid) in Arsenical Therapy, J. A. M. A. **117:** 1692-1695 (Nov. 15) 1941.

[16] (*a*) Ursari, A.: Experiments on Detoxicating Action of Aminoacetic Acid for Arsphenamine, Riforma med. **53:** 1437-1468 (Oct. 9) 1937. (*b*) Barlow, O. W., and Klinck, G. H.: Detoxication of Neoarsphenamine by Means of Various Organic Acids, J. Pharmacol. & Exper. Therap. **80:** 81-92 (Jan.) 1944.

[17] Müller, R.: Polyneuritis Following Sulfanilamide Therapy, Acta med. Scandinav. **121:** 95-113 (May 14) 1945.

[18] Jorgensen, J., and With, T. K.: Acute Porphyria, Lancet **1:** 54-56 (Jan. 11) 1947.

[19] Longley, B. J.; Clausen, N. M., and Tatum, A. L.: Experimental Production of Optic Atrophy in Monkeys by Administration of Organic Arsenical Compounds, J. Pharmacol. & Exper. Therap. **76:** 202-206 (Nov.) 1942.

[20] Bieter, R. N.; Baker, A. B.; Beaton, J. G.; Shaffer, J. M.; Seery, T. M., and Orr, B. A.: Nervous Injury Produced by Sulfanilamide and Some of Its Derivatives in the Chicken, J. A. M. A. **116:** 2231-2236 (May 17) 1941.

[21] Draize, J. H.; Woodard, G., and Calvery, H. O.: Methods for the Study of Irritation and Toxicity of Substances Applied Topically to the Skin and Mucous Membranes, J. Pharmacol. & Exper. Therap. **82:** 377-390 (Nov.) 1944.

haustible legerdemain of the chemist will provide substitute compounds that never show any idiosyncrasy. The physician beseeches the chemist as follows:

> Build me newer molecules,
> O my Soul—
> As the swift seasons roll
> Let each new compound,
> Safer than the last,
> Avoid the reactions observed in the past
> Till all at length are free
> From vexing idiosyncrasy.

But I do not believe that medical practitioners can take pride in evasion as the answer to the problem, nor am I optimistic enough to belive that it will ever be possible to evade the issue completely. To me it represents one of the most challenging problems in medicinal therapeutics.

THE OBSTRUCTIVE PROSTATE

FRANK HINMAN, M.D.
San Francisco

The prostate lies at the neck of the bladder between the two sphincters surrounding the urethra from which it originates. The forty-odd ducts of this tubuloalveolar structure open onto the lateral and posterior walls of the urethra. The glands and ducts are embedded in an extensive framework of fibrous and smooth muscle, the whole enclosed in a common fibrous capsule penetrated by the ejaculatory ducts, which open on the verumontanum at about the middle of the prostatic urethra posteriorly. Normally, there is no lobulation. Le Duc's[1] careful study, by the injection of individual ducts with India ink and the demonstration of the distribution of each unit later after the specimen had been made translucent, disclose lateral and median portions only, no separate anterior or posterior lobes.

The only function of the prostate is to aid in reproduction. It forms no internal secretion and its external one, as Huggins[2] and others concluded after extensive studies, serves no greater purpose. It is an accessory in function, along with the seminal vesicles and the bulbourethral glands of Cowper, but because of its position at the neck of the bladder and the peculiarities of its changes with age it takes the lead over all in morbidity.

The obstructive prostate is of several varieties. Benign enlargements and median bar formations are almost always obstructive; inflammations, cysts, prostatic calculi, leiomyomas and fibromyomas occasionally, but cancer infrequently, unless associated with one or more of the preceding conditions. Benign enlargement and carcinoma are common affections, each with a high rate of disability and death. Since obstructive conditions are so frequently associated with carcinoma and time will not permit full presentation of all of them, the discussion will be limited to benign enlargement and carcinoma.

Benign enlargement of the prostate is not a hypertrophy or merely a hyperplasia of the prostatic elements, the terms commonly used. The majority of authorities believe that it is a new growth of fibrous, muscular and glandular tissues, serving no physiologic purpose, a fibromyoadenoma. It occurs uniformly as spheroids or lobules about that portion of the urethra above the level of the verumontanum. It is never found distal to this structure except by encroachment from size. It is not invasive but always encapsulated, and with growth it compresses the uninvolved parenchyma of the prostate into the so-called false capsule from which it can be enucleated en masse. It can take the form of lateral, median, commissural, subcervical, subtrigonal or anterior lobulation alone or occur in various combinations of these, the most frequent being bilateral and median lobular enlargement. It is periurethral and as it gets bigger and bigger enlarges downward, the urethral type; upward, the vesical type, invariably within the internal sphincter; or, as is usual, both ways.

Here then is a new growth whose regular rel ship to neighboring structures indicates a commo origin. The constant effect denotes a constant ant cedent. What is it? Jores[3] in 1894 was probably th first to distinguish periurethral from true prostati glands (fig. 1) and, by tracing the ducts through serial sections, had shown how several early enlargements seemed to involve these periurethral glands and not the true prostatic tissue. Following this lead, Motz and Perearneau[4] (1905) attempted to show that enlargements arise from these "glandes periurethrales

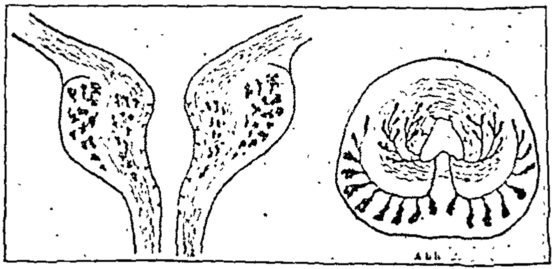

Fig. 1.—Diagrammatic representation of the true prostatic glands the periurethral glands. (From Adrion, W.: Ein Beitrag zur Aetiolog der Prostatahypertrophie, *Beitr. z. path. Anat. u. z. allgem. Path.* 191-202, 1922.)

Reischauer[5] in 1925 offered the first plausible ex nation of how this occurs, and his theory has been supported by Grassman[6] (1928), Obendorfer (1931), Deming and others[8] (1935), Le Duc[1] (1939) and others.

Reischauer assumed that the initial lesion is fibrous or fibromyomatous nodule which extremely early and rapid penetration of glandu elements from the periphery (fig. 2). The pr begins in the submucosa of the prostatic urethra an vesical neck as multiple outshoots of young spindl cells, which soon develop into small fibromas ar fibromyomas which are quickly invaded by th ingrowth of the adjacent glandular tissue to form th pathologic picture of fibromyoadenomas, the benig enlargements of the prostate (figs. 3 and 4). Appar ently glandular masses are never found witho

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Read in the General Scientific Meeting at the Ninety-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., June 10, 1947.

[1] Le Duc, I. E.: The Anatomy of the Prostate and the Pathology of Early Benign Hypertrophy, J. Urol. **42**: 1217-1241, 1939.

[2] Huggins, C.: Physiology of the Prostate Gland, Physiol. Rev. **25**: 281-295, 1945.

[3] Jores, L.: Ueber die Hypertrophie des sogenannten mittleren pens der Prostata, Virchows Arch. f. path. Anat. **135**: 224-247,

[4] Motz and Perearneau: Contribution a l'étude de l'évolution l'hypertrophie de la Prostate, Ann. de mal. d. org. genito-urin. **23**: 1548, 1905.

[5] Reischauer, F.: Die Entstehung der sogenannten Prostatahy trophie, Virchows Arch. f. path. Anat. **256**: 357-389, 1925.

[6] Grassman, W.: Beitrage zur Histogenese der sogenannten Pros hypertrophie, Virchows Arch. f. path. Anat. **270**: 514, 1928.

[7] Obendorfer, S., in Henke, F., and Lubarsch, O.: Handbuch speziellen pathologischen Anatomie und Histologie, Berlin, Julius Spr 1931, vol. 6, p. 3.

[8] Deming, C. L., and others: Some Endocrinological Relationship Prostatic Hypertrophy: Clinical and Experimental Studies: Prelim Report, J. Urol. **33**: 388-399, 1935.

aglandular areas, although Deming and Neumann[9] found 6 aglandular masses without glandular invasion in the 24 prostates studied. No one has ever demonstrated this process of new growth in the prostate proper although leiomyomas and fibromyomas are found there occasionally.

One may perceive from the preceding facts what the prostate is and how it forms and will want to know, I am sure, why more than 50 per cent of men over 45 years of age develop benign enlargement of the prostate. Unfortunately no one knows why, but most investigators suspect some sort of endocrine disturbance as the fundament. Deming thinks the prostate of dogs and other mammals is probably Mullerian in origin and suspects the periurethral glands of man of being so too. This might explain why the diffuse enlargement in dogs is different from the lobulated enlargement found in man. Monkeys also develop diffuse enlargement. They have no periurethral glands. No one, *however, has demonstrated the embryologic origin of* these glands. Johnson's[10] careful study in 1920 demonstrated neither submucosal nor mucosal glands.

There are more than a dozen other theories, the most popular probably being that it is not a new growth but an inflammatory reaction, and Wade[11] (1914), with this in mind, proposed the term "chronic lobular prostatitis." The lesion microscopically is something like chronic mastitis or cystic hyperplasia of the breast, the analogue of endometrial hyperplasia in the uterus, both of which are forms of abnormal involution. This similarity and its incidence in later life, when disturbance of this kind occurs, give additional support to an endocrine factor as the cause. When this is known there may be found a means of correction, and then there will be a gradual decline in the progressive successful surgical therapy which has reduced the earlier woeful morbidity of this disease to a remarkable minimum in recent years.

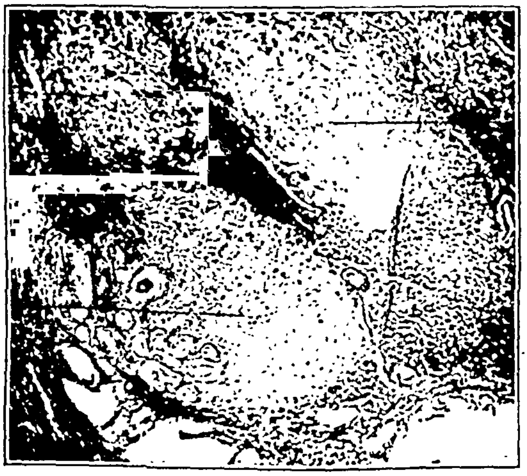

Fig. 2.—Microscopic demonstration of the invasion of fibromyomatous tissue by adjacent glandular tissue as the initial lesion in benign prostatic enlargement (from Reischauer[2]).

Cancer of the prostate, like enlargement, occurs in later life and the two often occur together but are unrelated otherwise. Unlike enlargement, which involves periurethral glands, cancer arises from any other part of the parenchyma of the true prostate, usually in the periphery. It is this external position which makes the early recognition of its presence possible. When it arises in portions beyond reach of the examining finger it becomes an occult form of the disease, a form which gains importance with attention.

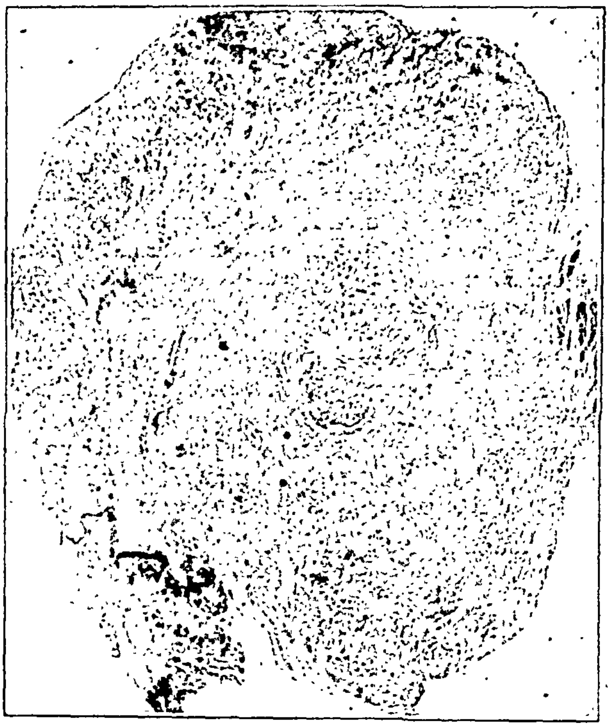

Fig. 3.—Demonstration of the independence of enlargement and of the true prostatic glands: photomicrograph of a section identical with the area of figure 4, showing the nodular enlargement above the compressed prostatic tissue forming its false capsule (specimen of Le Duc[1]).

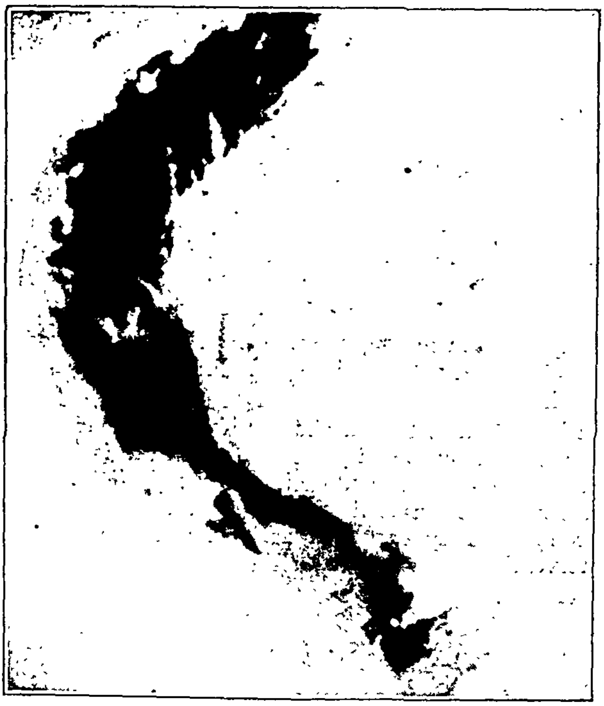

Fig. 4.—Photograph of the same area as figure 3 after a true prostatic duct has been injected with India ink and the specimen cleared, showing how the unrelated enlargement squeezes the glandular tissue.

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9. Deming, C. L., and Neumann, C.: Early Phases of Prostatic Hyperplasia, Surg., Gynec. & Obst. **68**: 155-160, 1939.

10. Johnson, F. P.: The Later Development of the Urethra in the Male, J. Urol. **4**: 447-501, 1920.

11. Wade, H.: Prostatism: The Surgical Anatomy and Pathology of the Operative Treatment, Ann. Surg. **59**: 321-359, 1914.

Unfortunately only the early lesions near the surface of the posterior portion are palpable per rectum. All other lesions, no matter where they start, will extend in time to involve the posterior portion and be palpable, but their diagnosis then is late. As in cancer anywhere, it is the early lesion which is most suitable for radical surgical intervention, the late lesion being incurable.

The approved use of endocrine therapy in the treatment of cancer of the prostate in recent years has so changed the problem that almost every one seems willing to rely on it alone. The relief of urinary obstruction when it occurs, as it usually does sooner or later, is purely palliative whether secured by transurethral resection or by perineal or suprapubic enucleation. None of these surgical methods for the relief of obstruction cures the cancer. The question which endocrine therapy has raised, then, is whether early diagnosis and radical surgical procedures are still applicable in its treatment.

A study of past experiences will give a better understanding of the problem, and comparison as far as possible of the various results will give one the opportunity of drawing one's own conclusion in regard to the place early diagnosis and radical surgery should take in it.

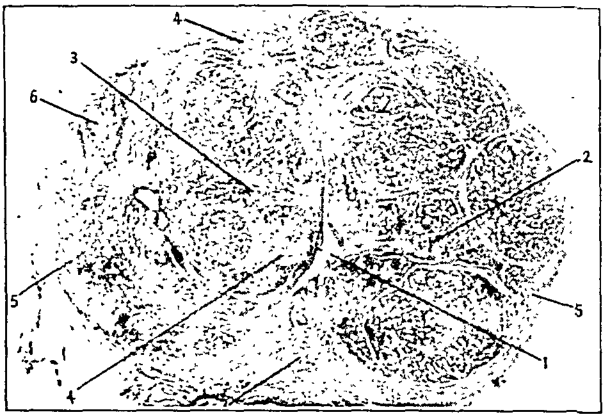

Fig. 5.—Photomicrograph of a cross section of a multilobulated enlargement with two occult primary lesions, neither palpable (from Vernet[30]): 1, urethra; 2, enlarged right lobe; 3, enlarged left lobe; 4, primary cancerous lesion in the left lateral portion, far anterior and commissural; 4′, primary cancerous lesion in left posterior portion next to verumontanum; 5, compressed prostatic glands; 6, primary cancerous lesion in left anterolateral region, and 7, infiltrated space which corresponds to the ejaculatory tubules. Not one of these three widely separated lesions (4, 4′ and 6) of cancer would be palpable per rectum.

First, what is known about cancer? Second, what happens without any treatment or with the ineffective methods of roentgen and radium therapy? Third, how effective is endocrine therapy? Fourth, what has been accomplished by early diagnosis and radical surgical intervention?

1. *What is known about cancer?*

With the remarkable lengthening of the expectancy of life (from 47 years in 1900 to near 67 years in 1947) there has been an alarming increase in the number of deaths from cancer, which now takes a toll of life in this country second only to cardiovascular disease. About seventeen million of the approximately seventy million males in the United States are over 50 years of age. The incidence of cancer of the prostate in this group is variously estimated from postmortem observations (Rich,[12] Kahler,[13] Gaynor,[14] Moore,[15] Myers[16] and Baron and Angrist[17]) of random sections as 14 to 29.4 per cent, or as high as 46 per cent if serial sections have been studied (Baron and Angrist,[17] 1941). This means that at least three to five million and possibly as many as eight million Americans now have cancer of the prostate.

Cancer differs little here pathologically from cancer elsewhere. Rare forms are the sarcomas and medullary carcinomas. Scirrhus and adenocarcinomas are the common forms and give the characteristic stony hardness on rectal palpation. Further detail leads to controversy, and yet none of the points at issue affect in one way or another the final conclusion in regard to radical surgical procedures.

One of these differences of opinion is in regard to the place of origin, which is extremely important in its relation to early diagnosis. It is almost universally agreed that primary cancer arises in the prostate gland unrelated to enlargement, which arises from the periurethral glands. It seems reasonable to conclude that cancer may start in any portion of this part of the gland. It then spreads within its capsule, so that no matter where it started the posterior portion is involved before invasion of the seminal vesicles. Earlier authors, notably Geraghty[18] (1922), were misled by this fact into believing that all cancers arose in this so-called posterior lobe, but Kahler[13] (1939) in a pathologic study of autopsy material found more primary lesions in the anterior and lateral regions together than in the posterior. An anterior or posterior position would still be in the right or left component of the gland, which has developed on lines of bilateral symmetry. Gaynor[14] (1938) located 98.5 per cent of 203 primary cancers in the periphery of the portion involved and, with others, inferred that atrophy first starting in the periphery was related in some way to the onset of cancer. This location, however, gives the advantage of being palpable per rectum only when located posteriorly. Not all are so located. Hence, the problem of early diagnosis is not only the discovery of the primary lesion by rectal palpation but also the development of methods by which the occult forms of cancer which are not palpable may be discovered (fig. 5).

Another difference of opinion is in regard to the onset of metastasis. Involvement of the perineural lymphatics is one of the earliest changes in cancer of the prostate, occurring, according to Kahler[13] (1939), in "practically all of these cases." This fact would seem to weaken if not annihilate the argument for radical surgical intervention. Opponents believe that lymphatic invasion means metastasis and therefore, since neither the primary nor secondary lymph zones of the prostate can be removed, an operative procedure is useless even with early diagnosis. They overlook the fact, however, that this early invasion of lymph spaces surrounding the nerves is confined within the true capsule of the prostate for a long time. Extension into vesicles, invasion of distant lymphatics and of bones and viscera by way of the blood stream are late manifestations (Batson,[19] 1940). Complete removal and cure of the lesion while it is limited within the prostate is possible and has been accomplished repeatedly, even when perineural lymphatics in the capsule have been invaded.

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[12] Rich, A. R.: On the Frequency of Occurrence of Occult Carcinoma of the Prostate, J. Urol. **33:** 215-223, 1935.

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[16] Myers, G. M.: The Occurrence of Carcinoma in Clinically Benign Prostatic Obstructions, Colorado Med. **34:** 248-251, 1937.

[17] Baron, E., and Angrist, A.: Incidence of Occult Adenocarcinoma of the Prostate After Fifty Years of Age, Arch. Path. **32:** 787-793 (Nov.) 1941.

[18] Geraghty, J. T.: Treatment of Malignant Disease of Prostate and Bladder, J. Urol. **7:** 33-65, 1922.

The whole intent of the foregoing discussion is to promote early diagnosis. The evidence which favors early diagnosis and radical surgical therapy may be questioned, so the experiences which together form the evidence should be scrutinized.

TABLE 1.—*Experiences with Endocrine Treatment*

		After Castration		Dead in					
Author	Treatment Number	With Metastases	Without Metastases	1 Year	2 Years	3 Years	4 Years	5 Years	Comment
Vest and Frazer,[21] 1946......	Castration, 365	194	153 (18 cases not classified)	15%	33%	38%	11%	....	Includes Huggins, 1944; Alyea, E. P.: J. Urol. 53:143, 1945; Nesbit, R. N., and Cummings, R. H.: J.A.M.A. 120:1109, 1942; Emmett, J. L., and Greene, L. F.: J.A.M.A. 127:63, 1945, and Bumpus, H. C.; Massey, B. D., and Nation, E. F.: J.A.M.A. 127:67, 1945
	71 (closed 2 yrs.)	28	...	8	8	3	1	3 died, other causes; 5 living	
			40	2	5	7	....	4 died, other causes; 27 living	
Greene and Emmett,[26] 1946..	Bilateral orchiectomy, 219	119	51	22%	45%	62%	....	....	
Berger, C. C., and Sauer, H. R.: Surg., Gynec. & Obst., 80:128, 1945	Androgen, 130 (castration and diethylstilbestrol, 100); castration, 26; castration and diethylstilbestrol, 18; diethylstilbestrol, 56	65	65	18	30 18+12	....	....	....	
Huggins, C.: Canad. M. A. J. 50:301, 1944	Castration, 21	15	6	6	12 6+6	.... Remainder alive more than 21 months	....	....	
Kretschmer, H. L.: J.A.M.A. 123:755 (Nov. 20), 1943	Castration, 11	4	7	....	....	....	....	....	
Nesbit and Plumb,[25] 1946....	Castration, 75	30	45	18.5%	37.3%	51.4%	66.6%	....	
Scott, W. W., and Benjamin, J. A., Bull. New York Acad. Med. 21:307, 1945	Castration, 82	26 (2 not listed) 40% dead in 15.1 mo.	52 40% dead in 17.1 mo.	(25 dead in 1944)	....	....	....	....	Either dead or unbenefited after 3 years

TABLE 2.—*Experiences with Early Diagnosis and Radical Surgical Procedures*

			Dead Postoperative		Living			Preoperative Diagnosis				
Author	Number of Cases	Surgical Mortality	Without Metastases	With Metastases	Without Metastases	With Metastases	5 Yrs.+	Clinical	Biopsy	Incontinence	Normal Control	Fistula
v. Yllyés, G.: Ztschr. f. Urol. Chir. 41:123, 1935	18	(Includes occult and radium treated) 12.1%	..	..	..	..	10%	..	..	..	..	..
Smith, G. G.: J. Urol. 35:640, 1936	50	5 10.0%	6	25	14	33% (1, 8 yer.)	6	13	7	6 Poor, remainder good, fair	11 Excellent	3 (2 from radium)
Smith, G. G.: Pennsylvania M. J. 44:1391, 1941	71	5	7	35	..	4	20	68	3 14	7 (11%)	20 (32%)	..
Colston, J. A. C.: New England J. Med. 223:205, 1940	91 81	6 6.0%	9	..	10	..	19 (50% after deduct.)	..	..	5 (15%)	11 (41% of last 3 yrs.)	..
Colston,[27] 1945	(1904-1939) 88	5 5.8%	17	?	22	?	18.2%	..	..	..	..	..
Colston, J. A. C.: J.A.M.A. 122:781, 1943	(1937-1942) 73 (358 cases)	1 5.5%	2	9 — — 69 — —	49	9	50.0%	..	..	8 Poor —11 fair—	19 Excellent	..
Belt, E.: J. Urol 48:287, 1942	50	.. 4.0%	10	19	19	19	11	..	..	..	..	..
Creevy, C. D.: J.A.M.A. 120:1102, 1942	10	.. 10.0%	..	..	..	..	..	..	..	2 —1 fair—	6	..
Wildbolz, H.: Schweiz. med. Wchnschr. 9:726, 1928	40	3 7.5%	..	..	14	..	4 (30% living 3 yrs.)	..	..	No	40	No
Hinman & Hinman,[28] 1947....	45	6 13.3% (Within 2 mo.)	..	..	..	..	..	45	18 (Confirmatory)	5% (Partial)	78% (5% fair control) (12% unknown)	1 (Closed spontaneously)
Hinman & Hinman,[28] 1947...	23 (5 year series)	.. ..	5	9	9	0	56.5% (1 to 17 yrs.)	23	..	..	..	..

2. *What happens without any treatment or with the ineffective methods of roentgen and radium therapy?*

The onset of cancer of the prostate is elusive, without signs or symptoms, and an estimation of the period from beginning to end is presumptive. The many reports on the duration of life from diagnosis to death are deceptive, in that the majority of cancers were recognized late in the course of the disease. When the facts about occult carcinoma and metastasis are explored, it seems probable that the disease may exist for many years without causing symptoms or spreading beyond its place of origin. This delay prolongs the period for making an early diagnosis and should incite an extra effort to improve one's methods of diagnosis so that full advantage of it be taken, provided of course that early diagnosis and radical surgical methods will cure the disease. Particular studies of what happens without treatment are few. The number of patients who have been followed through to death is hardly large enough to give an exact picture, and the conclusion is further obscured by the difficulty of dating the onset. Two thirds of the patients followed by Bumpus[20] (1926) with metastasis on examination were dead within nine months, and 58 per cent without metastasis were dead one year after the examination which disclosed the presence of cancer. With no subdivision with respect to having or not having metastasis, Vest and Frazier[21] (1946) have followed 74 patients for nine years, by which time all but 2 were dead. Eleven, or about 15 per cent, had died of other causes. Fifty-two, or 70 per cent, were dead within three years. Of the remaining 20, 3 died in the fourth, 13 in the fifth and 2 each in the sixth and seventh years. Only 6, or 8.1 per cent, survived five years.

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[19] Batson, O. V.: The Function of the Vertebral Veins and Their Role in the Spread of Metastases, Ann. Surg. 112:138-149, 1940.

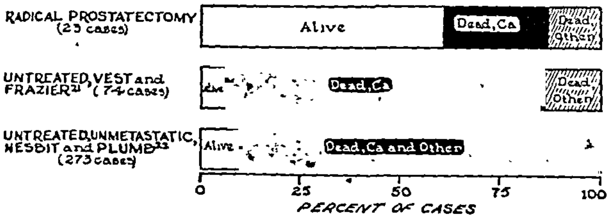

Fig. 6.—Comparative survival, five year series, demonstrating the superiority of early diagnosis and radical treatment over no treatment (from Hinman and Hinman,[25] 1947).

Of the 273 untreated patients without evidence of metastasis studied by Nesbit and Plumb[22] (1946) only 27, about 10 per cent, had survived five years; and of 544 hospital patients with untreated carcinoma of the prostate, Griswold[23] (1946) found only 38, or about 7 per cent, who had lived five years after the diagnosis had been made.[20] To judge from foregoing statements, between 90 and 95 of every 100 men will succumb within five years of the time cancer strikes them. The expectation of life at the age of 60 is 17 years; at 65, 14; at 70, 11, and at 75, 8 years.[24] The mortality rate from all causes over this 15 year period when cancer is most frequent goes up from 2.817 at 60 to 9.178 per 100 at 75. Of 100 men at age 60, between 80 and 85 will be living five years later; but if all at age 60 had had a prostatic cancer, more than that many would be dead. In other words, 10 to 15 of 100 men with cancer at age 60 will die from other causes and 80 to 85 will die from cancer within five years. This big difference in the mortality rates between a group without cancer and a group with cancer shows the error of the general attitude of indifference which arises from a belief that these men haven't long to live anyway.

3. *How effective is endocrine therapy?*

None of the experiences with castration and endocrine therapy have covered a five year period (table 1). Nesbit and Plumb[25] (1946) reported a series of 75 patients treated by castration and closed thirty-five months. Eighty-five per cent of the 33 with metastasis and 52 per cent of the 42 without metastasis were dead. Vest and Frazier[21] (1946) studied the results of castration in 74 patients, closed for two years, 28 with and 46 without metastasis. Of the former group, 8 died the first year, 8 the second, 3 the third and 1 the fourth. Three died of other causes and 5 were still living. Of the latter group, without metastasis, 2 died the first, 3 the second and 7 the third year. Seven died of other causes and 27 were living. Sixty-two per cent of Greene and Emmett's[26] (1946) series of 219 patients were dead within three years after bilateral orchiectomy. The real benefit that most patients with advanced cancer of the prostate derive from hormonal therapy must not be minimized. The relief from pain, the improvement in urination with recession of the local growth and the gain in general health are often remarkable. The indications are, however, that in a five year period almost as many will die as in the untreated series. The immediate benefits are not permanent, and the cancer may show an increase of virulence later. Most urologists, therefore, hesitate to use this method of treatment for early cancer.

4. *What has been accomplished by early diagnosis and radical surgical intervention?*

As already stated, only about 5 in every 100 men with cancer of the prostate are seen early enough to justify radical surgical procedures. Even so, experiences with the operation are sufficient to prove its usefulness (table 2). Colston[27] (1945) has reported

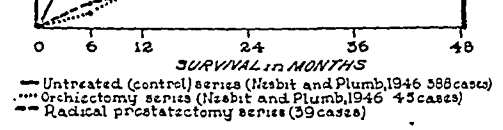

Fig. 7.—Comparative survival, shorter term (unclosed) series, demonstrating the superiority of early diagnosis and radical surgical treatment over orchiectomy (hormone therapy) in the treatment of cancer of the prostate (from Hinman and Hinman,[25] 1947).

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20. Bumpus, H. C.: Carcinoma of the Prostate: A Clinical Study of One Thousand Cases, Surg., Gynec. & Obst. **43:** 150-155, 1926.
21. Vest, S. A., and Frazier, T. H.: Survival Following Castration for Prostatic Cancer, J. Urol. **56:** 97-111, 1946.
22. Nesbit, R. M., and Plumb, R. T.: Prostatic Carcinoma: A Follow-Up on Seven Hundred and Ninety-Five Patients Treated Prior to the Endocrine Era and a Comparison of Survival Rates Between These and Patients Treated by Endocrine Therapy, Surgery **20:** 263-272, 1946.
23. Griswold, M. H.: Cancer of the Prostate in Connecticut, Connecticut M. J. **10:** 106-109, 1946.
24. Longevity at Record High in Industrial Population, Statist. Bull. Metrop. Life Insur. Co. **27:** 1-3, 1946.
25. Nesbit, R. M., and Plumb, R. T.: Prostatic Carcinoma Treated by Orchiectomy: A Third Report Based on Seventy-Five Cases Observed for at Least Thirty-Five Months Following Orchiectomy, Univ. Hosp. Bull. Ann Arbor **12:** 2, 1946.
26. Greene, L. F., and Emmett, J. L.: Further Observations on the Treatment of Carcinoma of the Prostate by Bilateral Orchiectomy, S. Clin. North America **26:** 1007-1017, 1946.
27. Colston, J. A. C.: Surgical Removal of Cancer of the Prostate Gland: The Radical Operation, J. A. M. A. **127:** 69-72 (Jan. 13) 1945.

48.2 per cent five year cures; and my associate and I[28] in a series of 25 patients operated on five or more years ago reported 56.5 per cent alive, 1 after seventeen years. The comparative survivals of a closed five year series are shown in figure 6 and for the shorter term (unclosed series) in figure 7.

In spite of this evidence, less than 5 of every 100 prostatic cancers are diagnosed early, and the hidden position at the start will not account for the 95 per cent of failures. Many physicians, suspecting cancer or even being sure of it, keep silent, because they know of nothing better, or refer the patient to a member of that large group of urologists who neither advocate nor perform radical surgical operations.

Cancer involves the prostatic glands first, arising as a rule near the periphery of that portion involved, and it grows slowly in the beginning, giving plenty of time for early recognition. If it is located in the posterior portion it may be palpable per rectum. If in the lateral, anterolateral or median portion it may be suspected and discovered by other methods.

The early lesion in the posterior portion gives the sensation of stony hardness. It feels flat rather than spheric (inflammation). It is just beneath the capsule, more superficial than deep, and has a sharp edge or corner. It is perceived best with the patient kneeling forward with hands on a chair or elbows on a table, feet apart. Local lesions of inflammation (particularly tuberculosis, which is rare) are rounded or nodular, and a roentgen picture of the area is always indicated in order to rule out the presence of stone as the cause of the induration. When the observations are characteristic or suggestive enough, the patient should be prepared for the perineal operation at which the area is exposed, a biopsy of it taken and examined immediately by frozen section. If positive, radical removal is completed. If negative, the wound is closed and the patient is up and out of the hospital a few days later. An associated enlargement, which is so frequently present, can be enucleated as in perineal prostatectomy, or if the age of the patient and the small size of the enlargement indicate its removal preferably by transurethral resection, this can easily be done at once through an opening in the urethra before closure of the perineum. Needle biopsies are misleading and have been largely abandoned.

For the early recognition of those primary lesions which cannot be palpated per rectum, two disciplines have been developed through experience. In the past ten years my own records show 43 cases which were unsuspected on rectal palpation before operative intervention. They were discovered by microscopic study of material removed at transurethral resection or of the specimen after perineal or suprapubic enucleation for enlargement. These cancers had invaded the enlargement at its periphery (see 6 on figure 5); they started in the parenchyma of the gland compressed by the enlargement to form its false capsule. Resectionists, therefore, should put aside for particular microscopic search the material removed from the deeper peripheral portions of the enlargement.

The literature is full of reports of malignant degeneration and of tumors arising in areas of benign prostatic enlargement. There is reason to suspect that neither occurs, or at least rarely. Reports like Flynn's[29] (1946) of death from cancer of the prostate nine years after the detection of occult cancer in the specimen removed by suprapubic prostatectomy do not mean nine years' survival with cancer. Pathologists repeatedly have demonstrated the multicentric nature of this lesion. Moore[15] (1935) found 3 widely separated areas in 4 of his cases and 2 areas in 7 others. Ten patients of Gaynor's[11] (1938) series had multiple lesions. Many writers, notably Vernet[30] (1944), have expressed the belief that enlargement is never a focus. Even if this is only partially correct, every suprapubic and perineal prostatectomy should be followed by a careful search of the surface of the specimen and of the cavity left after enucleation, and a biopsy with frozen section of any areas at all suggestive should be made. A cure by radical removal is then possible (fig. 8).

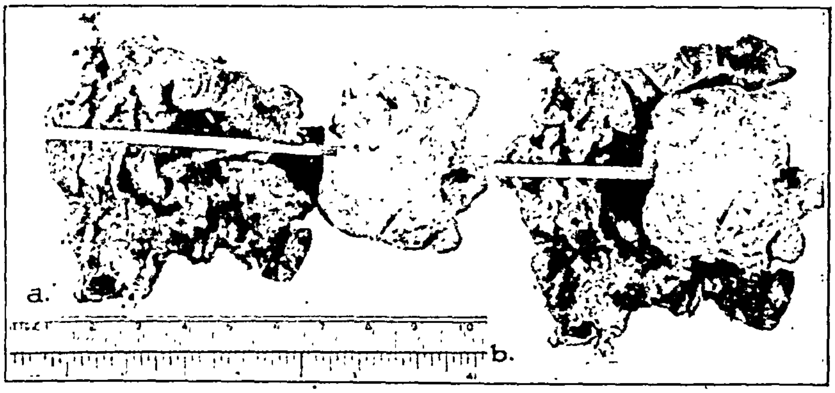

Fig. 8.—Cancer was unsuspected before perineal prostatectomy for enlargement; enucleation from the neck of bladder on right was found to be difficult, and the area felt indurated. A specimen was immediately taken for biopsy; cancer was found on examination of a frozen section, and radical removal of the whole prostate with seminal vesicles was completed. (*a*) Photograph of gross specimen, whole prostate, vesicles and enlargement. The probe is through the enlargement removed en masse; the slot at the upper part of cavity is where the biopsy specimen was taken. (*b*) Photograph taken after the enlargement had been replaced in the cavity from which it had been enucleated. The primary lesion in the right anterolateral portion of the true prostate had only invaded the neighboring area of enlargement. A cure is probable, since there is no evidence of metastasis.

All the evidence now available indicates that to discover cancer while it is limited within the capsule of the prostate is an early diagnosis; that radical surgical intervention at this time will cure over 50 per cent of these patients, and that to increase the number of early diagnoses above the present dismal 5 per cent is a worthy effort.

It is evident also that benign enlargement and carcinoma are distinct and separate lesions of the prostate, even though they commonly occur together.

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28. Hinman, F., and Hinman, F., Jr.: The Early Diagnosis and Radical Treatment of Prostatic Carcinoma, read before the meeting of the California State Medical Association, May 1, 1947.

29. Flynn, J. E.: Primary Carcinoma of Prostate of Twelve Years' Duration: Case Report, J. Urol. **55**: *626-630*, 1946.

30. Vernet, S. G.: Patologia Urogenital, Barcelona, Editorial Miguel Servet, 1944, vol. 1.

Brucellosis.—Alice Evans first identified brucellosis, determined that it and Malta fever were identical and proved that this infection and Bang's disease in cattle were caused by the same organisms. The huge program of the Department of Agriculture to clean up infected herds is based mainly on her discovery.—Paran, Thomas: Research and Total Health, *M. Annals District of Columbia,* June 1947.

METHOD OF TREATING MASSIVE OBSTETRIC HEMORRHAGE

JOHN TOTTERDALE COLE, M.D.
New York

Today, hemorrhage outranks all other single causes of maternal death in the United States. Great loss of blood is an ever-feared complication of pregnancy, and when it occurs it creates an immediate emergency which must be met promptly and effectively. It is the purpose of this paper to outline the method of blood replacement which is used at the Woman's Clinic of the New York Hospital.

There has been little clinical study of the early phases of hemorrhagic shock, while an abundance of literature exists describing experiments which have been performed on laboratory animals. Until rather recently the accepted treatment of this type of shock included use of such measures as the Trendelenburg position, oxygen, blood, plasma, dextrose and isotonic sodium chloride solutions, adrenal preparations, morphine, extremity binders and external heat. Subsequent research and clinical experience has cast doubt on the efficacy of all these forms of therapy except blood and plasma. In several instances investigation has indicated not only that certain forms of treatment are of questionable value but that the measures are actually deleterious. So it remains that the basis of successful therapy is the rapid restoration of blood volume by the intravenous use of blood or plasma, preferably the former.

PREVENTION

The best treatment of shock is prevention by the early use of blood transfusions and adherence to the principles of good, atraumatic surgery with close attention to hemostasis. Absurd, yet impressive, is the statement that hemorrhagic shock is caused by the loss of one drop of blood, and since the physician does not know which drop, he should save every drop that he can. When loss of blood is not checked hemorrhagic hypotension, if not treated, may progress rapidly to impending shock and the latter to irreversible shock, from which recovery is impossible.

TREATMENT

Preliminary Typing of Blood.—For over three years it has been the practice in this hospital to determine the blood group and the Rh type of all patients at their first antepartum visit. In an earlier publication the value of this procedure was indicated, and I now wish to emphasize it again. In massive hemorrhage, as will be shown, the time factor is of great importance, and any measure directed toward obviating delay in transfusion should not be overlooked.

Precautionary Measures.—It has been our policy to cross match the blood of all patients prior to delivery if it appears that a large loss of blood may occur. Thus, in cases of twins, hydramnios, myoma uteri, varicosities of the vulva, excessive size of the infant, manual removal of the placenta, or when a difficult forceps delivery is anticipated, the blood of the patient will have been cross matched during labor, and 1 or more pints of blood will be held on call for immediate use at the central blood bank. In the case of cesarean section it has long been a clinic rule that the operation is not to commence until 1 pint (473 cc.) of suitable blood is present in the operating room. Recently precaution has gone one step further. The intravenous administration of sixth-molar sodium lactate solution is started at the time of operation, using a recipient transfusion set and a needle of adequate caliber. Thus, if a transfusion is needed during the cesarean section, a search for veins will not be necessary.

Measurement of Blood Loss.—The general tendency is to underestimate the quantity of blood loss. For this reason it is understandable, yet regrettable, that maternal deaths have been recorded in which the hemorrhage occurred from an episiotomy wound. Pastore[1] has emphasized the importance of measuring the loss of blood, and in massive hemorrhages a fairly accurate knowledge of the volume of blood lost serves as a guide to further treatment. On the other hand, the amount of blood lost is not a good measure of the patient's condition and many times it does not affect the final outcome. This is evident when one considers that deaths are reported in which the loss of blood was as little as 500 cc., and other patients have survived after losses of over 3,000 cc. of blood. Many variables may be present which will influence the individual patient's tolerance of hemorrhage: the age, weight, degree of hydration and general physical condition of the patient, the rapidity of loss of blood and similar factors.

Control of Hemorrhage.—Numerous articles describe various methods of controlling hemorrhage. When massive bleeding has occurred and the patient is in a critical condition, care should be exercised in selecting a means of checking the hemorrhage which will be rapid, effective and atraumatic. Every attempt should be made to shorten the duration of anesthesia by avoiding surgical procedures which may well be postponed to a time when the patient's condition has improved. At cesarean section, once hemostasis is assured the abdomen should be closed by the most rapid methods. In delivery which has been accomplished from below, needless suturing may prove dangerous, since packings will temporarily control bleeding. Trauma and loss of time are to be guarded against at every turn.

The Time Factor.—In the treatment of hemorrhagic shock delay in initiating appropriate therapy is hazardous. Many times it is a fatal error. The delay may usually be traced to ineffectual methods of transfusion, optimistic estimates of the amount of blood lost and hopeful waiting for the patient herself to overcome irreparable blood loss. Again, the surgeon who overlooks a primary hemorrhage resulting in hemorrhagic hypotension may suddenly be faced with a secondary hemorrhage and irreversible shock. It has often been observed that the longer a patient is in a state of shock the more difficult treatment is and the more unfavorable the prognosis. It is my belief that the time factor is not generally appreciated. Its importance will be graphically shown later.

From the Department of Obstetrics and Gynecology, Cornell University Medical College and the New York Hospital.

[1] Pastore, J. B.: A New Method for Measuring the Blood Loss in the Third Stage of Labor, Am. J. Obst. & Gynec. **29:** 866, 1935. A Study of the Blood Loss in the Third Stage of Labor and the Factors Involved, ibid. **31:** 78, 1936. Pastore, J. B., and Stander, H. J.: Hemorrhage in Obstetrical Patients, Texas State J. Med. **35:** 390, 1939.

The Obstetric Blood Bank.—It seems almost unnecessary to state that the development of blood banks has done much to reduce the number of hemorrhagic fatalities. The New York Hospital has been fortunate in having a large, active, general blood bank. In spite of these facilities it has been found most useful to have a small obstetric blood bank on the delivery floor itself. This bank contains 2 pints (946 cc.) of type O, Rh negative, citrated whole blood which has been treated with Witebsky blood group specific substance to eliminate anti-A and anti-B factors. Two pints (946 cc.) of commercial dried plasma are also held in reserve. This blood may be used for any patient without preliminary typing or cross matching and is replaced from time to time as it ages. Any unit removed from this bank is used only in an emergency, and the unit must be immediately replaced.

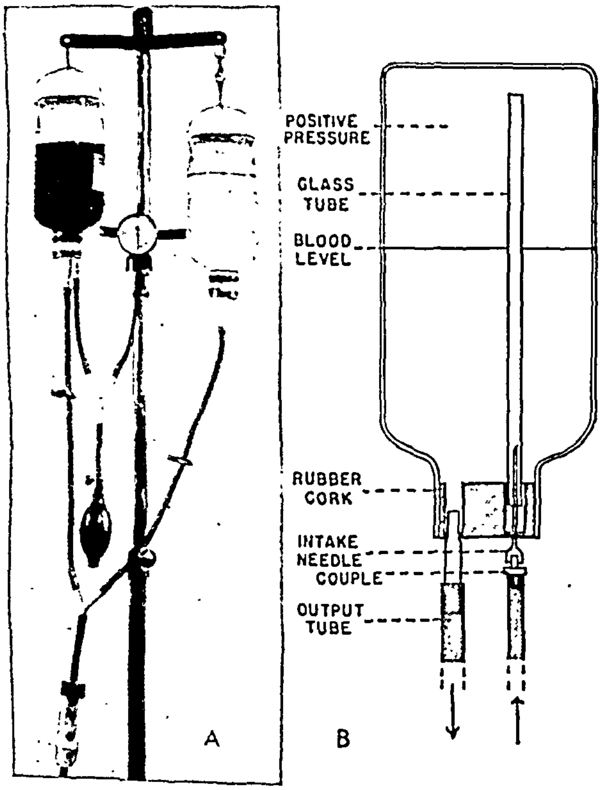

Fig. 1 *A.*—Photograph of standard, closed method transfusion set with simple pressure attachment in place. The left flask contains blood; the right flask contains sixth-molar sodium lactate solution. They are connected by the lower Y tube to a filter from which solutions pass to the patient. The central Y tube connects a sphygmomanometer bulb, aneroid meter and the air-intake needle of the blood bottle. The connection to the air-intake needle may be made by slipping the tubing over the needle or by employing the metal coupling from a sphygmomanometer. The coupling makes an exact fit with a standard needle. *B,* detailed sketch of pressure connection to the blood bottle.

A Method of Rapid Transfusion.—When a patient is suffering shock from massive blood loss, the ordinary drip method of blood transfusion is wholly unsuitable. Studies here indicate that if recovery is to occur, at least 40 per cent of the total blood lost should be replaced during the first hour following the initial hemorrhage. Rapid treatment should not be stopped until there has been a definite response in the blood pressure, and thereafter blood may be given by the usual methods until there has been 100 per cent or more replacement. When an exceedingly large volume of blood has been lost, such rapid replacement is not possible by the drip method. Consequently, during the past three years, a simple pressure mechanism has been added to the ordinary transfusion apparatus (fig. 1).

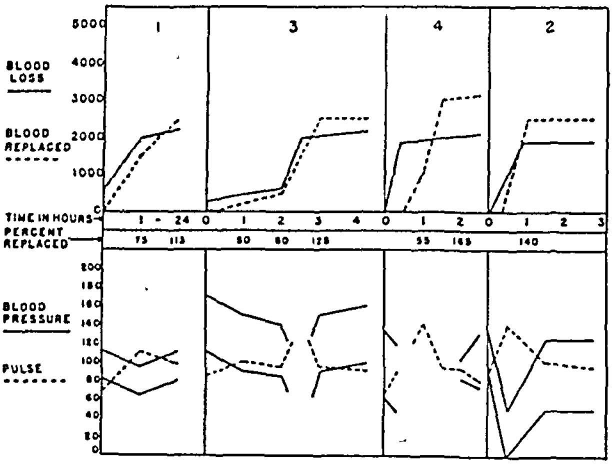

Fig. 2.—Rapid transfusion: the shaded area indicates blood deficit. Cases 1 and 3 illustrate the advantages of anticipating hemorrhage. Although the blood losses were 2,100 and 2,200 cc., blood was given almost as rapidly as it was being lost. In case 1 there were only slight fluctuations in pulse and blood pressure readings; in case 3 the readings were unobtainable for a very short period of time. In cases 4 and 2 the hemorrhage, although it was not anticipated, was treated promptly and more than adequately. Changes in pulse and blood pressure were much more pronounced. The total blood losses were 2,100 cc. and 1,900 cc., respectively. In all 4 cases the blood replacement was 50 per cent or more in the first hour.

Using this apparatus and maintaining a pressure of 120 mm. of mercury in the bottle of citrated blood, 500 cc. of blood may be given quite rapidly (in seven to ten minutes using an 18 gage needle, in two to five minutes using a 15 gage needle). Veins of the arm or hand are usually selected as the site for trans-

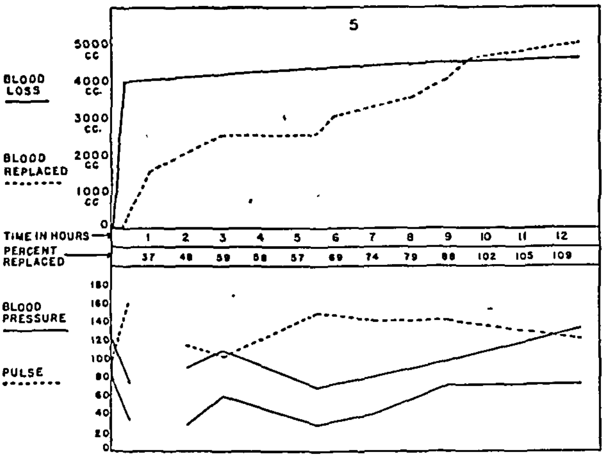

Fig. 3.—Rapid transfusion: the shaded area indicates blood deficit. Case 5 illustrates the dangers of undertreatment. The patient suffered a rapid, massive hemorrhage of 4,000 cc., and a total blood loss of 4,600 cc. The emergency was met promptly and treated effectively for three hours. At this point, 59 per cent of the lost blood had been replaced and a satisfactory clinical response had occurred. From hours three to five and one-half an optimistic attitude was adopted, and no further blood transfusions were given during this period. At the end of five and one-half hours a rising pulse rate and falling blood pressure ushered in a secondary phase of shock which was most difficult to overcome, and which nearly proved fatal. At five and one-half hours rapid transfusions were again started; they were continued to nine and one-half hours, at which point 100 per cent blood replacement had been achieved. See figure 6.

fusion. Saphenous and femoral veins, although of better caliber, are usually not readily available during obstetric procedures.

Alkali Agents.—Dextrose and isotonic solutions of sodium chloride have been all but discarded as therapeutic measures; instead, sixth-molar sodium lactate solution is now used. It has long been known that a straight line relationship exists between the fall in blood pressure and the alkali reserve. Experimental evidence discloses that if the acidosis of shock is not combated it may be a major factor in so-called irreversible shock by featuring in myocardial and capillary damage.[2] By definition, recovery from irreversible shock is impossible; but there is evidence that the administration of alkali agents proves useful in delaying the onset of irreversible shock until the more effective agents, such as blood and plasma, are available in sufficient quantity.[3] The secondary purpose in giving alkali agents is to combat transfusion reactions which might presumably occur when multiple transfusions are administered.

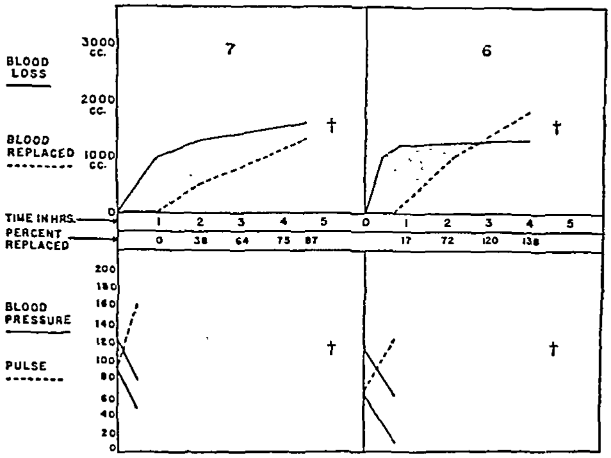

Fig. 4.—Drip method transfusion: the shaded areas indicate blood deficit. Cases 7 and 6 illustrate classic hemorrhagic fatalities. In case 7 the blood loss was 1,600 cc., and in case 6 the loss was 1,300 cc. Note that in each instance transfusions were started three-quarters of an hour or more after the initial hemorrhage. Note also that at the end of an hour only 0 per cent and 17 per cent replacement had been accomplished. In case 6, at four hours 138 per cent of the blood lost was replaced, yet the patient succumbed at this point. In both cases the pulse and blood pressure readings were never obtained after the hemorrhage.

RESULTS

The previously described methods have been used on both the obstetric and gynecologic services. Since the method was adopted there have been no deaths from hemorrhage during 3,600 major and 3,900 minor gynecologic operations. On the obstetric service 1 death due to hemorrhage (case 8) has occurred during 14,000 deliveries. While the method has been in use there have been 250 postpartum hemorrhages (600 cc. or more blood loss).

In this study cases in which massive hemorrhages (1,300 cc. or more blood loss) occurred have been selected at random. In cases 6 and 7 the patients were not treated by the method described herein; thus, the response to the ordinary drip method of transfusion and the pressure method of transfusion may be compared.

CONCLUSIONS

1. The importance of hemorrhage—the outstanding cause of maternal deaths in the United States—should make further investigation imperative.

2. Quick control of hemorrhage by the least traumatic method and rapid replacement of the blood lost remain the best means of treatment of hemorrhagic shock.

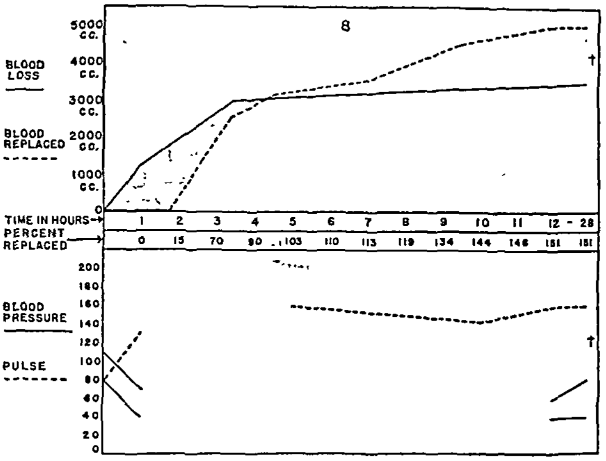

Fig. 5.—Rapid transfusion: the shaded area indicates blood deficit. In case 8 the blood loss was 3,500 cc. The importance of the time factor is obvious. Rapid transfusions were not started until one and three-quarters hours after the initial hemorrhage, which was followed by a large secondary hemorrhage. The rapid transfusion method was continued until almost 100 per cent of the lost blood had been replaced and was then supplanted by the drip method until a response in pulse and blood pressure was recorded. At twenty-eight hours the patient suddenly expired, although there was 151 per cent blood replacement.

3. An effective plan of treatment advises: preliminary typing, precautionary measures, accurate measurement of blood loss, effective hemostasis, the development of an obstetric blood bank, recognition of the importance of the time factor and rapid transfusions in conjunction with the administration of an alkali agent.

4. A rapid method of performing blood transfusions is described.

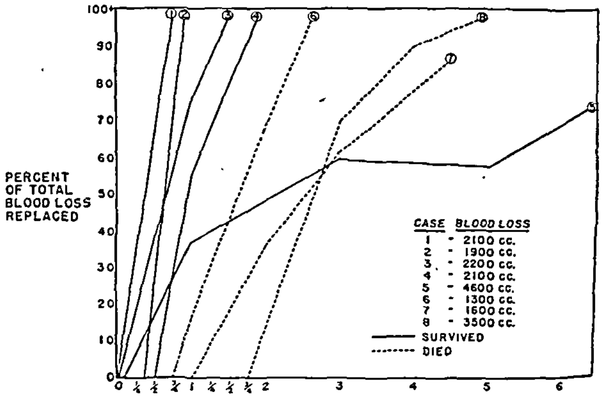

Fig. 6.—A combined graph of cases 1 to 8 illustrating the importance of time in blood replacement therapy. Transfusions were started in less than three-quarter hour, and at the end of one hour blood replacement was 50 per cent or better in all patients who survived except in case 5. In case 5 (see figure 3) 38 per cent blood replacement was accomplished at the end of the first hour, but treatment was inadequate after three hours. The patient went into a secondary phase of shock from which she gradually recovered after further rapid transfusions. Cases 6, 7 and 8 were fatal. Note that treatment was not started until three-quarters of an hour or more had elapsed since the initial hemorrhage. In the three cases blood replacement approached or bettered 100 per cent. In cases 6 and 7 the patients were treated by the drip method; in case 8 by the rapid transfusion method.

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[2] Ingraham, R. C., and Wiggers, H. C.: Alkalinizing Agents and Fluid Priming in Hemorrhagic Shock, Am. J. Physiol. **144**: 505, 1945.

[3] Wiggers, C. J.: The Failure of Transfusions in Irreversible Hemorrhagic Shock, Am. J. Physiol. **144**: 91, 1945.

MENINGITIS DUE TO CANDIDA (MONILIA) ALBICANS WITH RECOVERY

S. L. ZIMMERMAN, M.D.
LLOYD FRUTCHEY, M.D.
and
J. HEYWARD GIBBES, M.D.
Columbia, S. C.

Reports of meningitis due to Candida (Monilia) albicans have been rare. A review of the literature reveals that only 3 cases have been reported until the present time.[1] All have ended fatally despite therapeutic measures which consisted of iodide preparations, sulfonamide drugs, high voltage roentgen ray and others. In the most recent case, which was reported by Morris and associates,[1c] the patient had widespread fungous disease involving the skin, oral mucous membranes and nails. In this case the organism was demonstrated on direct smear in the spinal fluid Clinically, because of a high cerebrospinal fluid pressure, headache, papilledema and results of ventriculographic studies, a diagnosis of intraventricular block was suggested. This was somewhat confirmed by the postmortem observation of a granulomatous lesion involving the ependymal structures. This case had many similarities to the one reported here, the points of similarity being the meningeal involvement, the involvement of the mucous membrane, the ease with which the fungus was demonstrated both from the cerebrospinal fluid and the oral mucus membranes and the cytologic and chemical study of the spinal fluid. It differed in that this patient survived. Treatment in the present case consisted in the administration of iodide compounds, sulfonamide drugs and streptomycin.

It is believed that this is the first case of meningitis due to C. albicans with recovery which has been reported. The difficulty in concluding that the streptomycin has been the important factor in recovery will be apparent as the case is reviewed. Further discussion on this point will follow later. This is the first case in which streptomycin has been used, and therefore a report of the case is warranted. Because of the apparent rarity of the disease entity, the recovery alone, regardless of the therapeusis involved, is worthy of note.

The association of thrushlike lesions of the oral mucous membrane with ill fitting dentures has been noted in the past. The frequency of thrush and the rarity of systemic fungous disease as a complication is not entirely explained. The pathogenesis of meningeal involvement from the oral pharynx is not definitely known, two routes of spread having been suggested: first, by way of the blood stream and second, by direct extension through the cribriform plate of the ethmoid bone. We cannot, as a result of the study of this case, add any information on this point. Smith and Sano's[1a] demonstration that meningitis can be produced in rabbits by the intravenous injection of monilia previously obtained from a human subject lends support to the hypothesis that the extension is blood-borne.

REPORT OF CASE

History and Examination.—C. A. F., a white man aged 28, a textile worker, was acutely ill when he was admitted to the hospital on June 27, 1946. The past history was entirely noncontributory except that the patient had had malaria. He had always been frail, his average weight having been about 105 pounds (47.6 Kg.), his height 5 feet 4 inches (162.5 cm.). His service in the army included tours of duty in California, New Guinea and the Philippine Islands. There was a history of moderate alcoholic intake since separation from the service in December 1945.

One week prior to admission he noticed mild generalized headaches, which became increasingly severe and finally made it necessary for him to go to bed on June 25. On that date he became febrile and had sensations of chilliness. On the day of admission he noticed pain in the back of his neck. He had vomited prior to admission, but this was apparently not of the projectile type. He had become progressively drowsy during the day and had been restless and delirious at night during the two days immediately preceding admission.

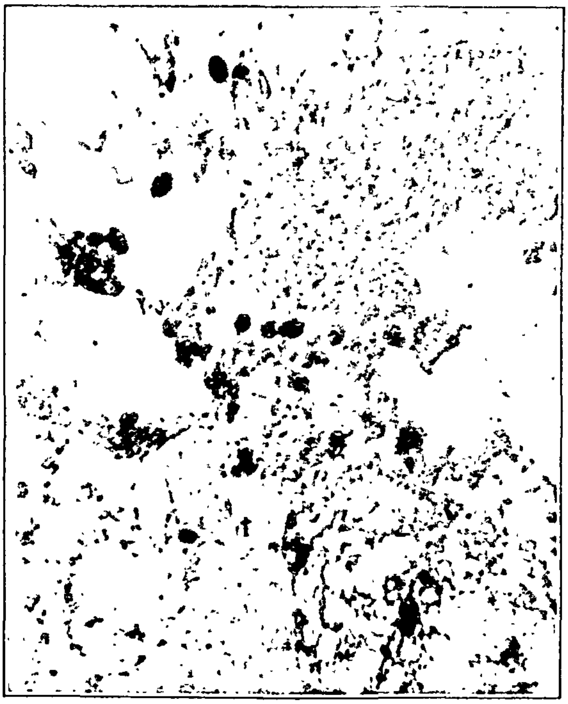

Fig. 1.—Photomicrograph of direct smear of spinal fluid; note the large round budding cells.

Physical examination revealed an acutely ill, dehydrated, febrile white man who was delirious. Hiccoughs were present at the rate of six to ten per minute. His temperature was 101 F. rectally. The pulse rate was 102 and the respiratory rate 25 per minute. The disk margins were blurred and the retinal veins distended; the arteries were within normal limits. Examination of the mouth and pharynx revealed that white patches which varied in size from 0.5 to 2 cm. in diameter covered the soft and hard palate, the posterior pharyngeal walls and the base of the tongue. The surfaces of the smaller patches were adherent to the underlying structures and were slightly raised; the larger patches were slightly depressed, were loosely adherent to the underlying structures and left a gangrenous base when removed. The neck was stiff. The Kernig sign was bilaterally positive. The superficial reflexes were present. The deep reflexes were absent. Extreme lethargy alternated with

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From the medical service of the Veterans Administration Hospital (Dr. Frutchey); Chief of Medical Service (Dr. Zimmerman) and Consultant, Internal Medicine (Dr. Gibbes).

[1] (*a*) Smith, L. W., and Sano, M. E.: Moniliasis with Meningeal Involvement, J. Infect. Dis. **53**: 187-196 (Sept.-Oct.) 1933. (*b*) Miale, J. B.: Candida Albicans Infection Confused with Tuberculosis, Arch. Path. **35**: 427-437 (March) 1943. (*c*) Morris, A. A.; Kalz, G. G., and Lotspeich, E. S.: Ependymitis and Meningitis Due to Candida (Monilia) Albicans, Arch. Neurol. & Psychiat. **54**: 361-366 (Nov.-Dec.) 1945.

active delirium. More careful neurologic examination was not possible at the time. The lungs and heart were normal. The blood pressure was 118 systolic and 72 diastolic. The abdomen, except for a distended bladder which on catheterization yielded 36 ounces (1,065 cc.) of urine, was negative. There was no rash and no evidence of mycotic disease of the skin.

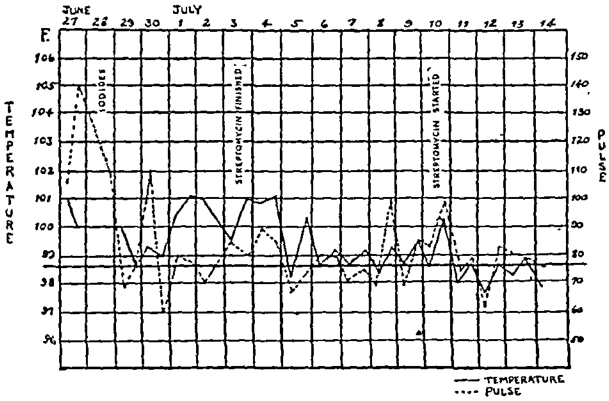

Fig. 2.—Correlation of streptomycin therapy with temperature and pulse rate.

The admitting impression was not definite. Diagnoses of bacterial meningitis, typhus fever, encephalitis and infectious mononucleosis were considered.

Urinalysis was normal. The white blood cell count was 5,500, with 62 per cent polymorphonuclear leukocytes, 32 per cent lymphocytes, 4 per cent monocytes and 2 per cent eosinophils. The hemoglobin was 16 Gm. per hundred cubic centimeters. No Plasmodium malariae were noted. The nonprotein nitrogen level was 31 mg. per hundred cubic centimeters. Smear and culture of material from the mouth and pharynx yielded C. albicans.

Treatment and Course.—A lumbar puncture was performed on June 28. The initial pressure was 270 mm. of water. The manometric determinations were normal. Direct smear, stained with methylene blue, showed large, oval, budding yeastlike fungi (fig. 1). There were 37 lymphocytes per cubic millimeter. The protein level was 186 mg., the dextrose 66 mg. and the chlorides 585 mg. (as sodium chloride) per hundred cubic centimeters. (For this and for the analysis of subsequent lumbar punctures see figure 2.) No pedicle was formed, but the low chloride level in the fluid was suggestive of an acid-fast infection. There were no acid-fast organisms found.

At this time the temperature was 100 F., the pulse rate 120 and the respiratory rate 28 per minute. The patient was semicomatose and hiccoughing. A blood culture was subsequently reported as negative. Solution of potassium iodide, 10 grains (0.65 Gm.) three times a day, was prescribed, and in addition parenteral fluids were administered. One gram of sodium iodide was given intravenously as well. On June 29 the patient appeared somewhat more alert. Oral iodide preparations were given in gradually increasing doses, and the administration of intravenous iodide compounds was increased to 2 Gm. daily and continued practically throughout the entire course of therapy. On this day sulfadiazine therapy was started, 2 Gm. initially and 1 Gm. every six hours day and night. This drug was continued until July 3, at which time streptomycin therapy was begun. A level of 6 mg. of the drug per hundred cubic centimeters of serum was attained. Gentian violet medicinal was applied to the lesions in the mouth and pharynx.

Lumbar punctures were performed on June 29 and 30. The fluid revealed a positive smear and culture on June 29 and a negative smear and culture on June 30. The Pandy test was positive. and the cells increased from 37 to 70 lymphocytes per cubic millimeter. The temperature dropped slightly on these dates. The hiccoughing ceased. The Levinson test was reported negative on June 30. The urine was normal, except that cultures of urine revealed a staphylococcus, infection with which was considered to result from the repeated catheterizations. Agglutination tests for the usual febrile diseases were nondiagnostic. The white blood cell count, red blood cell count and hemoglobin level remained within normal limits throughout the patient's illness.

The temperature again rose, and the patient deteriorated somewhat clinically on July 1 and 2. On July 3 streptomycin therapy was started. The sulfonamide drugs were no longer given, but iodide administration, both orally and parenterally, was continued. The streptomycin dosage and the manner of its administration, as well as the levels of the drug attained in the blood, are indicated on the accompanying table. In addition, the intrathecal administration of streptomycin in doses of 0.025 Gm. initially and then 0.050 Gm. daily for a period of seven days was carried out. The temperature gradually fell, and, aside from one small rise to 100 F. on July 10, has remained normal since. The patient has been under continual observation for a period of four and one-half months. His neurologic symptoms gradually subsided, as did the papilledema. The latter was extremely slow in its subsidence. At present (November 1946) he is entirely asymptomatic, has gained weight and feels "as well as ever." Spinal fluid determinations have returned to practically normal limits during this period. The last fluid was obtained on November 5. The pressure and manometric determinations were normal. The Pandy reaction was negative. There were no cells, although the protein content of the fluid was slightly elevated. The administration of iodide compounds was continued intermittently through October. At present it appears that the patient is cured.

Data on Streptomycin Therapy, Blood Levels and Spinal Fluid Determinations

	Spinal Fluid							Streptomycin	
Date	Smear	Culture	Cells per Cu. Mm.	Proteins, Mg./100 Cc.	Globulin	Sugar, Mg./100 Cc.	Chlorides, Mg./100 Cc.	Gm. Adm. Every 4 Hr.	Blood Level, Micrograms
6/28	+	+	37	186	—	66	585 as NaCl	..	..
6/29	+	+	..	..	..	..	..	..	..
6/30	—	—	70	154	2+	..	644	..	..
7/ 3	..	..	..	..	..	..	..	0.1 I.M.	2.5
7/ 4	—	—	900	QNS	..	QNS	644	0.1	7.0
7/ 5	—	—	950	QNS	..	QNS	QNS	0.1 I.M.	10.0
7/ 6	—	—	850	120	..	QNS	QNS	0.2	6.0
7/ 7	..	..	..	..	..	..	..	0.2 I.M.	6.0
7/ 8	..	..	..	..	..	..	..	0.5	9.0
7/ 9	—	—	42	122	2+	..	..	0.5	8.0
7/10	..	..	..	..	..	..	..	0.5	9.0
7/12	—	—	101	..	2+	..	..	..	..
7/16	+	—	206	..	3+	..	..	..	..
7/22	—	—	24	67	1+	70	..	..	..
7/29	—	—	8	83	2+	..	..	..	..
8/ 6	..	..	25	44	1+	..	..	..	..
8/15	—	—	12	83	1+	..	..	..	..
8/27	—	—	12	75	..	55	720	..	..
9/17	—	—	0	79	..	83	725	..	..
10/3	—	—	2	57	2+	83	737	..	..
11/5	—	—	0	62	0	..	..	..	..

QNS, quantity not sufficient.

SOME REMARKS ON THE BACTERIOLOGIC DIAGNOSIS

As has previously been stated, direct smear of the spinal fluid and of material from the thrushlike lesions of the pharynx revealed large oval fungi. On culture on Sabouraud's medium and blood plates, incubated at room temperature and at 37 C. for four days, there was luxuriant growth of medium sized, creamy, moist colonies. Smears from these colonies, both wet and fixed, showed oval and round budding cells. Subcultures made on Sabouraud's medium, blood plates and corn meal agar to exclude contamination resulted in the same type of growth. Myceliums were noticed after eight to ten days' incubation, and the subcultures on corn meal agar produced myceliums bearing ball-like clusters of budding cells. Agglutination of the patient's serum against C. albicans was positive in a dilution of 1:40. This was accomplished at Duke University. No facilities existed for the performance of a complement fixation test for monilia.

COMMENT

The point of primary interest in this patient is the fact that he recovered from a proved meningitis due to C. (monilia) albicans. A review of the literature at our disposal suggests that this is a unique experience. Consequently, the treatment employed is reported in detail, and we wish to call attention to some of the implications which it suggests.

The diagnosis was established within twelve hours after the patient's admission to the hospital. He was immediately started on the customary treatment of iodide compounds by mouth and intravenously and the topical use of gentian violet medicinal to the mucous membranes involved. Within forty-eight hours his spinal fluid failed to yield C. albicans on either smear or culture, and his general condition showed some degree of improvement. However, two days later his clinical improvement was not maintained and his temperature reached its maximum point of 101 F. Streptomycin therapy was started the next day and was continued for eight days. During this time he was given 10.2 Gm. of streptomycin. The cell count in the spinal fluid was 900 the day after streptomycin was started and was found to be over 200 on the sixth day after it was stopped. At this time the organisms were again demonstrated in the spinal fluid after having been absent on six examinations covering a period of sixteen days. From this time forward the fluid remained free of C. albicans, and the cell count dropped rapidly. The last examination of the spinal fluid was done on November 5, more than four months after the start of the treatment, and it was found to be normal in every respect except a slight elevation of the protein content. The patient shows no subjective or objective residual indications of the disease.

While the iodide preparations were used intensively throughout the course of this patient's illness, we were not impressed with any indications of benefit from them. We saw nothing to suggest that the sulfonamide drugs, employed for a brief period, in any way modified the course of the disease. Simultaneously with the beginning of streptomycin therapy the temperature became lower. It rose to a little over 100 F. on the day that the treatment was finished, and then became and remained normal. The changes in the spinal fluid and the clinical improvement of the patient were much more gradual. It is, of course, possible that simple drainage of the spinal fluid and natural immunity reactions may have accounted for this patient's recovery. However, there is enough evidence suggestive of the efficacy of streptomycin in this case to warrant its trial in similar infections in the future.

CONCLUSION

In a case of meningitis due to Candida (Monilia) albicans in which recovery is reported, streptomycin therapy may have been of value.

STREPTOMYCIN IN THE TREATMENT OF DRAINING TUBERCULOUS SINUSES

BENJAMIN L. BROCK, M.D.
Chicago

One of the most impressive results in the treatment of tuberculosis in man by streptomycin has been obtained following its use in draining tuberculous sinuses.

Eleven Negro patients and 1 white patient, the majority of whom had multiple, draining, tuberculous, cutaneous sinuses, have been treated with streptomycin in the Veterans Administration Hospital at Oteen, N. C. There were 60 draining sinuses in the 12 patients reported in this series. The average length of time these sinuses existed prior to the institution of streptomycin therapy was twenty-four months. Treatment was started on 9 patients about July 1, 1946. In the other 3 patients it was initiated during the last week in September 1946. All but 2 of the patients had draining sinuses which originated in bone. In 1 of the 2 a sinus developed following laparotomy, and the other had several perineal sinuses originating in the ischiorectal area. All the cases were proved to be of tuberculous origin, either by biopsy or culture of the sinus material. Only 1 of the patients had active pulmonary tuberculosis.

A daily dose of 1.8 Gm. streptomycin, 0.3 Gm. every four hours, was given intramuscularly. Six of the patients received treatment for ninety days. The remaining 6 patients received treatment for one hundred and fifty days with an interruption of three weeks after the first ninety days.

Eleven of the 12 patients with tuberculous sinuses showed outstanding clinical signs of improvement; namely, a sense of well-being, an increase in appetite and a gain in weight. Some of the Negro patients, who were considered to be in a critical condition at the time streptomycin therapy was begun and who were extremely emaciated, began rapidly to gain in weight and have continued to do so. The average gain in weight has been 15 pounds (7 Kg.). Those who were febrile at the beginning of therapy quickly became afebrile and, with the exceptions of the few who had febrile reactions caused by the streptomycin, have remained so.

Certain toxic reactions were observed regularly. None was severe enough, however, to justify discontinuation of the streptomycin therapy. Besides the local reaction incident to the injection of the drug, the commonest clinical reactions have been those of headache and dizziness. Headaches, which have been a regular occurrence in other white patients who were treated with streptomycin because of their pulmonary lesions, have not been complained of by the Negro

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Formerly Clinical Director, Veterans Administration Hospital, Oteen, N. C.

The Streptomycin Committee, Veterans Administration, Washington, D. C., cooperated in this research.

From the Department of Medicine and Surgery, Veterans Administration Hospital, Oteen, N. C. Published with permission of the Chief Medical Director, Veterans Administration, who assumes no responsibility for the opinions expressed, or conclusions drawn, by the author.

Dr. Christopher Parnall Jr. assisted me during the early part of this study. Detail phases of this work were handled by Drs. Siegbert Bornstein, Chief of Laboratory, and his assistants; Milton R. Himalstein, Ear, Nose and Throat Department, and Parker D. Elrod and by Lieut. Ernest H. Winterhoff, M. C.

patients in this series, presumably because of the higher threshold for pain exhibited by this race. The average length of time which elapsed before the onset of the so-called vestibular symptom of dizziness was between three and four weeks. This symptom is usually exaggerated in the absence of light. A few of the patients had actual ataxia, and these patients complained of inability to distinguish objects or persons at a distance while in motion. In several instances dizziness has continued as long as three months following discontinuation of streptomycin therapy. The caloric test has regularly revealed a hypoirritability which was apparently equal in both ears and persisted after the cessation of treatment.

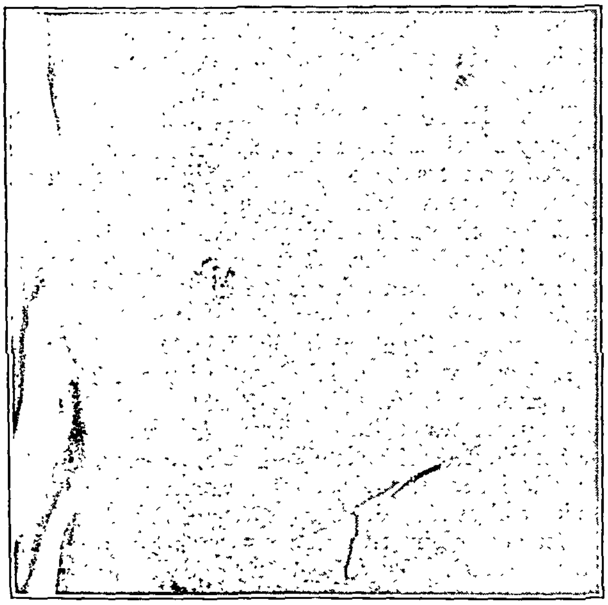

Fig. 1.—W. D., a Negro man aged 22, with draining sinus in the left lower quadrant resulting from wide incision of psoas abscess (June 13, 1946).

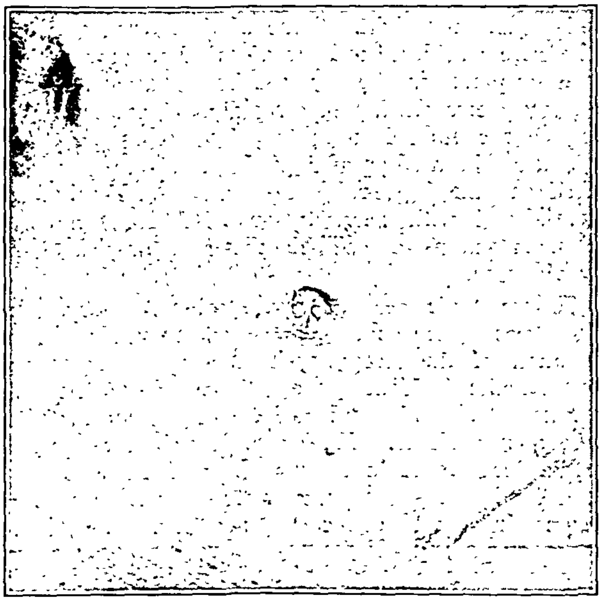

Fig. 2.—Same patient as in figure 1. The patient received streptomycin for ninety days. The sinus closed after eleven weeks. The sinus in the upper right quadrant closed after two weeks of therapy (Oct. 1, 1946).

In 3 of the patients a febrile reaction which occurred shortly after the administration of streptomycin was considered to be due to the drug. Several of the white patients have had a flushing of the skin, but none of the Negro patients has had this reaction. No case of exfoliative dermatitis has been seen.

Transient casts were found in the urine of 8 of the 12 patients. However, no renal damage of a permanent character was encountered. The blood urea nitrogen was not over 15 mg. per hundred cubic centimeters in any instance, and no evidence of hepatic damage was demonstrated.

Four of the patients manifested an eosinophilia of over 5 per cent, which persisted throughout treatment. Most of them had an elevated sedimentation rate at the beginning of treatment, and this was unaffected by the treatment. The streptomycin concentration of blood serum was between 10 and 20 micrograms per cubic centimeter in all cases. All samples of blood were taken two hours after the injection of streptomycin.

These cases have not been followed sufficiently long to determine whether streptomycin has produced a permanent closure of the sinuses, but the promptness with which they healed after the initiation of treatment is one of the outstanding observations in this serie Tuberculous sinuses of several years' duration, originating in bone, in the ischiorectal region or followin laparotomy for appendicitis, have closed within a wee to ten days in some instances. After about three t four days of streptomycin therapy the purulent materia draining from the sinuses became less purulent an smaller in amount. It has also been observed that th induration surrounding the sinus tracts and the tenderness associated with them have disappeared as early as one month after treatment was begun. There has been impressive evidence that closure is prompter when free drainage is present. If small abscesses exist under the skin and the sinus is not draining adequately, the area should be incised and the pus evacuated. The area then heals by healthy granulation. Where necrotic bone or cartilage is present, as for example in a rib or sternum, this necrotic material should be removed. When this is done, streptomycin accelerates healing.

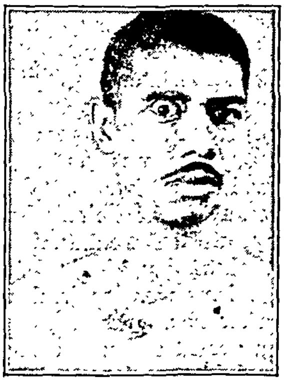

Fig. 3.—M. B., a Negro man aged 23, with orbital tuberculosis with unilateral exophthalmos and active involvement of the eyelid. Some necrotic bone in the orbital region was removed. There was some loss of vision in the involved eye. There was also a draining sinus over the anterior part of the chest (Sept. 1, 1946).

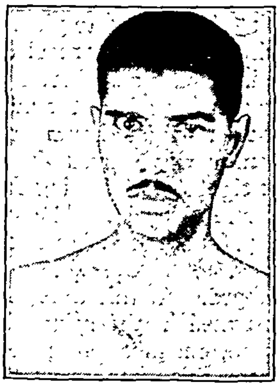

Fig. 4.—Same patient as in figure 3. Drainage from the orbit ceased after twelve weeks, and the sinus over the chest was closed after fifteen weeks. The exophthalmos was reduced so that the patient can almost close the eye. Plastic operation on the eyelid is contemplated. Pronounced regeneration of bone has been observed (Jan. 16, 1947).

When a large cold abscess exists in conjunction with tuberculosis of the vertebrae, there is little tendency for the pus to disappear under streptomycin therapy unless it is evacuated by open drainage. In several cases the abscess has been drained by this method in the groin or on the lateral surface of the thigh. One such abscess pointed in the back opposite the affected vertebrae and was drained by open incision. When these large open sinuses are allowed to drain while streptomycin therapy is being carried out they fill in quickly with healthy granulations and close. There has been no evidence, since closure of such sinuses in these patients, of any recurrence of pus in the paravertebral area or elsewhere. After drainage of the abscesses the patient feels greatly improved clinically, just as would be the case were nontuberculous abscesses drained.

One patient who had unilateral exophthalmos (figs. 3 and 4) and who showed radiographic evidence of advanced destruction of the orbital portion of the frontal bone prior to streptomycin therapy has recently manifested radiographic evidence of extensive regeneration of bone. As yet, however, there has been little evidence of regeneration of bone along the lateral surfaces of affected vertebrae or in ribs partially destroyed by a tuberculous process. This has been particularly true in the case of "punched out" areas in the shafts of long bones.

Nine (15 per cent) of the 60 sinuses closed within one to four weeks and 9 (15 per cent) closed within six to eight weeks after the administration of streptomycin was begun. It required between ten and twelve weeks for 30 (50 per cent) of the sinuses to close, and 11 (approximately 20 per cent) closed within thirteen to twenty weeks after streptomycin was instituted.

Of the sixty original draining sinuses only 1 continues to drain at this time (March 10, 1947) eight months after streptomycin therapy was started. Even this sinus is showing definite improvement since open drainage of the perineum was instituted on Nov. 18, 1946 and since discontinuation of streptomycin therapy on Dec. 26, 1946. The incised area is healthy in appearance, and it is believed that it will be completely closed within a short time.

Of the other sinuses the longest time which has elapsed since closure is eight months; the shortest time two months, and the average time four months.

Chronic Invalids Rehabilitated.—Not quite a year ago, in a VA hospital in Minneapolis, we had a group of 110 World War I veterans who were chronic invalids and bedridden; some had been in the hospital almost ten years. Most of them were helpless, flat on their backs. All were between the ages of 50 and 60. With the medical program as we found it in VA, these veterans could look forward only to staying in a hospital bed until they died. After the rehabilitation program had been going for eight months a check of these patients showed:

25 discharged from the hospital and back home, working at full time jobs.

30 discharged from the hospital and back home working at part time jobs.

40 more just about ready to leave the hospital, with the prospect of taking part time jobs a little later on.

5 expected to leave the hospital eventually.

Only 10 of the original 110 had no prospects for discharge from the hospital. And remember, every one of these patients was over 50 years of age. The thing could not have been done without courage, optimism and a lot of persistent hard work on their part.—Address by Dr. Paul R. Hawley before the twenty-sixth National Convention of Disabled American Veterans.

SYSTEMIC HERPES SIMPLEX (KAPOSI'S VARICELLIFORM ERUPTION)

Moccasin Venom Used in Conjunction with Penicillin in a Severe Case and with Diphenhydramine Hydrochloride ("Benadryl Hydrochloride") in a Mild Case

LESLIE PAXTON BARKER, M.D.
and
EARL S. HALLINGER Jr., M.D.
New York

Since the development of laboratory procedures which demonstrate its presence, the virus of herpes simplex has been found to be the cause of a wide range of infections. It has been demonstrated in such localized lesions as the common fever blister, aphthous stomatitis, acute herpetic gingivostomatitis[1] and paronychia. It has also been recovered from the spinal fluid[2] and brain substance[3] of patients with encephalitis. Since 1941 the virus of herpes simplex has been demonstrated in the cutaneous lesions of those infrequent and grave systemic infections known as Kaposi's varicelliform eruption.

This uncommon syndrome which bears Kaposi's name was first clinically described by him in 1887[4] as a disease resembling chickenpox and occurring in children with allergic eczema. His description of the disease follows:

> The vesicles are as large as a lentil, filled with clear serum, and the majority are umbilicated. They look like varicella vesicles but undoubtedly do not belong to this class. The integument which has been attached in this manner now appears still more swollen, even tense. The little patients have high fever (40 C. [104 F.] or more) and appear very restless. The vesicles develop very acutely (sometimes overnight) in large numbers and often continue to appear in successive crops for three or four days or even a week. Those which appeared first undergo desiccation, rupture and expose the corium, or they become encrusted and fall off. The largest number of these varicella-like vesicles are found on already eczematous skin, but smaller groups appear on the forehead, neck and even the shoulders and arms.

When Barton and Brunsting[5] in 1944 contributed their review of the extant literature on Kaposi's varicelliform eruption, only 67 cases of the disease had been described. According to the Barton and Brunsting study, 53 of the reported 67 cases had occurred as complications of chronic allergic dermatitis. The majority of the remaining cases followed such antecedent dermatoses as seborrheic dermatitis, sycosis vulgaris, simple trauma, impetigo, scabies and the puerperium. Fifty-one of the reported cases occurred in children. The mortality rate was 25 per cent, being much higher in children than in adults. Of the 50 patients whose sex was listed, 30 were male and 20 female.

From the Department of Dermatology and Syphilology, St. Luke's Hospital; attending dermatologist (Dr. Barker) and resident in dermatology (Dr. Hallinger).

[1] Ziskin, D. E., and Holden, M.: Acute Herpetic Gingivostomatitis, J. Am. Dent. A. **30:** 1697-1705 (Nov. 1) 1943.

[2] Armstrong, C.: Herpes Simplex Virus Recovered from the Spinal Fluid of a Suspected Case of Lymphocytic Choriomeningitis, Pub. Health Rep. **58:** 16-21 (Jan. 1) 1943.

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To date, this group of cases reported as Kaposi's varicelliform eruption represents a wide variation of a syndrome. From their description it is difficult to assign all of them to the same clinical category. The variety of names applied to the reported cases also indicate degrees of differentiation. Some of the names under which the disease has been described are: eczema herpetiforme,[1] pustulosis acuta varioliformis,[6] acute vacciniform pustulosis,[7] pustulosis vacciniformis acuta,[8] varioliforme pyodermien,[9] pyodermite post puerperale varioliforme,[10] eczema vaccinatum[11] and dermatitis vaccinica.[12]

Until recently no real cause had been established for any of the various reported cases of Kaposi's varicelliform eruption. Kaposi himself attributed the disease to a fungus. Other writers suggested a pyococcus as the cause. Cases have been described as occurring in persons with chronic dermatitis after vaccination for smallpox or exposure to vaccinia. Consequently the disease has sometimes been considered an unusual reaction to the virus of vaccinia in allergic persons. This assumption has never been established.

Seidenburg[7] in 1941 reported 2 cases, under the name of "pustulosis vacciniformis acuta," in which he demonstrated that rabbits inoculated with material from the cutaneous pustules were subsequently susceptible to the virus of vaccinia but were definitely immune to that of herpes simplex. He reasoned that the results of his cross immunization tests indicated that the disease was probably caused by the virus of herpes simplex and not by the virus of vaccinia. (It is possible that there are two distinct diseases with similar clinical characteristics, one caused by the virus of vaccinia and the other by that of herpes simplex.)

Since 1941 Wenner,[13] Barton and Brunsting,[5] Lane and Herold,[14] Lynch[15] and Blattner[16] and their workers have demonstrated by animal inoculation and immunization tests the presence of the virus of herpes simplex in the cutaneous lesions of patients with Kaposi's varicelliform eruption. Their research has given experimental proof that the virus of herpes simplex is the cause of at least some, if not all, cases of Kaposi's varicelliform eruption.

We think that those cases from which the virus of herpes simplex has been recovered should no longer be classified in the general category of Kaposi's varicelliform eruption. Because these virus infections have definite clinical symptoms of a systemic disease in addition to their diffuse cutaneous manifestations a more appropriate name would be systemic herpes simplex.

Within the past few months it has been our unusual opportunity to observe 2 cases of systemic herpes simplex which were proved by animal inoculation and immunization tests to be caused by the virus of herpes simplex. The first case, an extremely severe one, occurred in an adult woman with disseminated chronic neurodermatitis. The second, a mild form of the disease, also occurred in an adult woman; there was no preceding allergic history or dermatitis, but infection followed contact exposure to herpes labialis.

Because these cases represent differences in severity and background of systemic herpes simplex, and because we believe them to be the first cases treated with penicillin and moccasin venom (case 1) and with moccasin venom and diphenhydramine hydrochloride ("benadryl hydrochloride" N. N. R.) (case 2), we report them here.

REPORT OF CASES

Case 1.—*History.*—J. M., a white woman aged 18, employed as a telephone operator, had been treated for several years at the outpatient department of St. Luke's Hospital for a disseminated neurodermatitis.

On March 30, 1946 she was admitted to the dermatology ward suffering from an acute dermatosis of two days' duration. Her statement was that two days before admission she had awakened with a swollen, red, weeping condition of the face accompanied by generalized aching pains. She had stayed in bed and applied hot boric acid compresses to her face. When the swelling increased and blisters spread to other parts of her body, she came to the hospital for treatment.

Further questioning disclosed that four days previous to her cutaneous outbreak, exterminators had sprayed her apartment with a moth preventive. At first, because of her known sensitivity to Pyrethrum, she thought her condition might be the result of the moth spray. Also, it was found that the patient had had a severe head cold, conjunctivitis and general malaise ten days prior to admission. She had not had preceding lesions of herpes simplex, a recent vaccination, nor had she been exposed to persons with either. A few days before admission she had been exposed to measles.

Past History.—The patient had had an allergic dermatitis since infancy. From the age of 14 years this condition had been of the disseminated neurodermatitic type. She had suffered from hay fever from her sixth to her fourteenth year of age. Measles, mumps and chickenpox had occurred in early childhood. (Her mother reported that the attack of chickenpox had been very severe and also said that the patient's maternal aunt had hay fever and her maternal grandmother had asthma.) During the patient's previous visits to the outpatient department, the results of a thorough study in the allergy clinic showed a hypersensitivity to coffee, carrots and Pyrethrum.

Physical Examination.—On admission to St. Luke's dermatology ward, the cutaneous examination revealed redness, edema and swelling of the whole face including the eyelids. There was oozing and crusting on the cheeks with a secondary infection apparent in some of the lesions. The skin on the neck and upper part of the chest, especially on the shoulders, was bright red and moderately edematous. Scattered over the arms, on the flexor surfaces particularly, abdomen and thighs was a patchy chronic neurodermatitis with numerous blood-crusted excoriations. The cervical and submaxillary lymph nodes were enlarged and tender. The rectal temperature was 101 F., and the leukocyte count was 8,200 with 85 per cent polymorphonuclear neutrophils and 15 per cent lymphocytes. The entire condition at first suggested a disseminated neurodermatitis accompanied by an acute contact dermatitis of the face, neck and shoulders or smallpox in its early stages.

Treatment and Course.—On the first evening of hospitalization the patient had a severe chill. Her rectal temperature rose

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7. Seidenberg, S.: Zur Aetiologie der Pustulosis vacciniformis acuta, Schweiz. Ztschr. f. Path. u. Bakt. **4**: 398-401, 1941.
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10. Milian, G., and Fernet, P.: Pyodermite postpuerpérale varioliforme, Rev. franç. de dermat. et de vénéréol. **9**: 613-616 (Dec.) 1933.
11. Ellis, F. A.: Eczema Vaccinatum: Its Relation to Generalized Vaccinia: Report of Two Cases, J. A. M. A. **104**: 1891-1894 (May 25) 1935.
12. Ronchese, F.: Dermatitis Vaccinica (Kaposi's Varicelliform Eruption), Arch. Dermat. & Syph. **47**: 613-619 (May) 1943.
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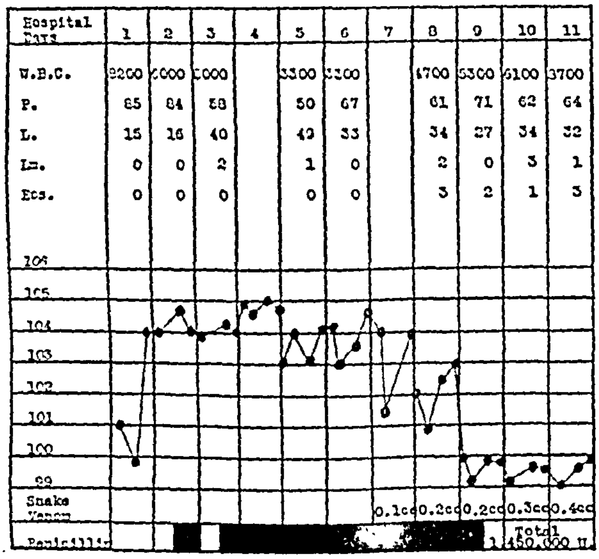
14. Lane. C. W., and Herold, W. C.: Kaposi's Varicelliform Eruption: Report of Five Cases, Arch. Dermat. & Syph. **50**: 396-402 (Dec.) 1944.
15. Lynch, F. W.; Evans, C. A.; Bolin, V. S., and Steves, R. J.: Kaposi's Varicelliform Eruption: Extensive Herpes Simplex as a Complication of Eczema, with Addendum, Arch. Dermat. & Syph. **51**: 129-135 (Feb.) 1945.
16. Blattner, R. J.; Heys, F. M., and Harrison, M. L. K.: A Filterable Virus Isolated from a Case of Kaposi's Varicelliform Eruption, Science **99**: 432-434 (May 26) 1944.

suddenly to 104 F. and remained between 104 and 105.2 F. for the next three days. Because of the secondary infection of many of the lesions, penicillin was administered; 30,000 units intramuscularly every three hours for five doses. Eighteen hours later, when increased itching and burning of the patient's skin suggested a possible sensitivity, penicillin therapy was temporarily discontinued. Cold boric acid solution compresses were applied to the face and neck

The day after admission the patient was acutely ill. She complained of severe general malaise, and her face showed such pronounced edema, redness and tumefaction that it was swollen beyond recognition. Her eyelids were swollen shut, and vesicles had developed on them as well as on the vermilion border and on the inner side of her lips. Extremely painful lesions in her mouth necessitated tubal feedings and infusions of dextrose and isotonic solution of sodium chloride. A definite conjunctivitis existed, but no vesicles were seen on the cornea or conjunctiva.

On the second hospital day new crops of split-pea-sized vesicles and numerous pustules appeared on the face, neck and chest. A few scattered lesions were evident on the arms, legs and abdomen, as profuse on the normal skin as on the patches of neurodermatitis. Some of the vesicles and pustules had become umbilicated and now looked like the lesions seen in chickenpox. Considerable crusting and secondary infection were present on the face.



Hospital Days	1	2	3	4	5	6	7	8	9	10	11
W.B.C.	2200	2000	3000		3300	3300		4700	5300	6100	3700
P.	85	84	58		50	67		61	71	62	64
L.	15	16	40		49	33		34	27	34	32
Lm.	0	0	2		1	0		2	0	3	1
Eos.	0	0	0		0	0		3	2	1	3
Snake Venom							0.1cc	0.2cc	0.2cc	0.3cc	0.4cc
Penicillin										Total 1,450,000 U.	

Fig. 1 (case 1).—Temperature chart showing daily leukocyte and differential counts and the days on which moccasin venom and penicillin were given. P., polymorphonuclear leukocytes; L., lymphocytes; Lm., mononuclear leukocytes and Eos., eosinophils.

Because of the edema, tumefaction, redness, varicelliform lesions, general malaise, fever and low leukocyte count, a diagnosis of systemic herpes simplex was made.

Penicillin therapy was resumed, 40,000 units being administered every three hours. This dosage was continued for six days until a total of 1,450,000 units had been given. Wet dressings of potassium permanganate solution (1:5,000) were applied to the face and neck for two days.

During the third and fourth days the patient's condition looked grave. Her rectal temperature remained between 104 and 105 F. New groups of varicelliform vesicles and pustules continued to appear on the eyelids, face, neck and upper part of chest, with scattered lesions appearing on the trunk, arms and thighs. Many of the lesions crusted; others ruptured leaving raw, eroded surfaces. By the fourth day the eroded areas were most prevalent on the upper part of the chest and on the shoulders, where they coalesced to form large, irregular-shaped, denuded, granulating patches which bled freely when the dressings were applied. As the secondary infection had now cleared, paste of zinc oxide (with 20 per cent olive oil added) was substituted for the wet dressings of potassium permanganate .

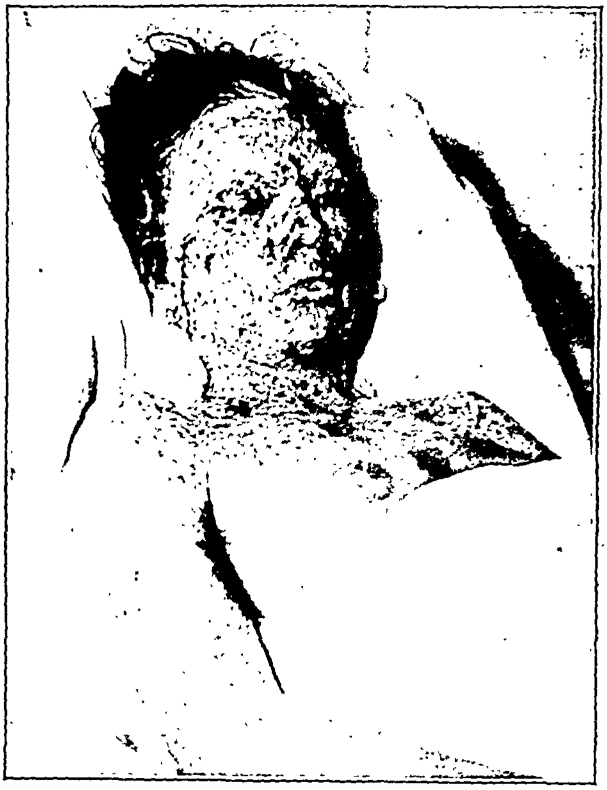


Fig. 2 (case 1).—Photograph on the sixth day of the disease showing *edema, crusting and redness of the face and neck with involvement of the eyelids and of the vermilion border of the lips.*

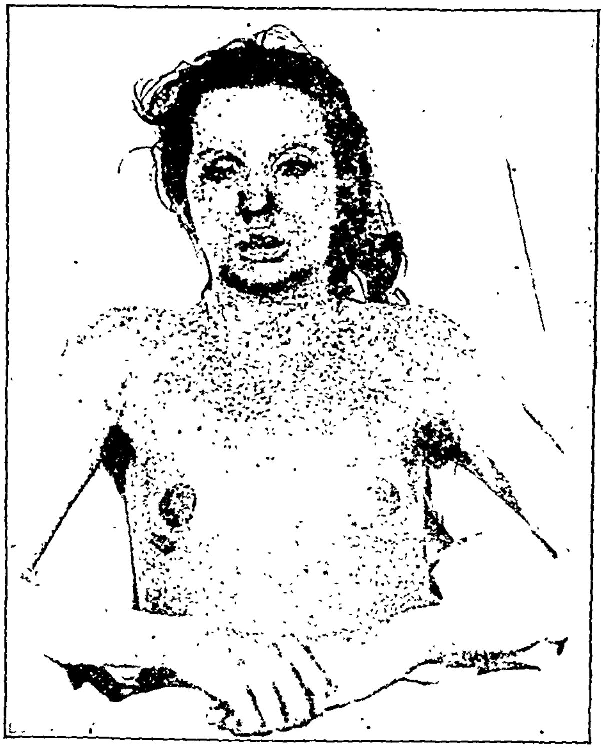


Fig. 3 (case 1).—Photograph on the fourteenth day of the disease, showing crusted lesions *on the chest, neck and eyelids and diffuse redness of the face, neck and chest.*

At this stage, fluid from a vesicle was inoculated into the scarified corneas of two rabbits (the Paul test[17]). This test proved the presence of the virus of herpes simplex.

Because of its reported effect in herpes simplex, 0.1 cc. of moccasin venom[18] (1:3,000 solution) was injected intradermally on the afternoon of the patient's fifth hospital day. Her temperature dropped to 101.4 F. on the following morning but rose again that afternoon to 104 F. A 0.2 cc. dose of snake venom was then administered. The temperature again fell to 100.6 F., but it rose again in the afternoon to 103 F. Another 0.1 cc. of moccasin venom was given, and within six hours the temperature dropped to normal, where it remained except for occasional afternoon elevations to about 100 F. Three subsequent daily injections of the venom, 0.2 cc., 0.3 cc. and 0.4 cc., respectively, were given.

The acute erythema of the face, neck and chest began to subside on the day following the drop in temperature. (Some diffuse redness persisted, however, for four weeks.) Most of the edema, except that on the eyelids, disappeared rapidly. The vesicles and pustules so prominent during the first ten days of the illness continued to appear in decreasing crops until, after the twelfth day, only a few new lesions arose. By the twentieth day all crusts had fallen off leaving red, slightly depressed areas.

The patient's general recovery was simultaneous with her cutaneous improvement. Her diet was gradually increased from fluids to soft solids to a regular diet with the omission of coffee and carrots, to which she was allergic.

When she was last seen, sixty-five days after the onset of her illness, the patient's face and neck still revealed a slight blotchy redness, but no residual scarring was present.

Laboratory Studies.—Daily erythrocyte count and hemoglobin determination were within normal limits throughout the course of illness. The leukocyte count, which was 8,200 on admission, gradually dropped to 3,300 on the sixth and seventh days, then rose again to 8,700 by the thirteenth day (see figure 1 for the differential count).

The Paul test was positive.[17] On the fourth day of hospitalization (sixth day of the disease) fluid from an unruptured vesicle on the chest was inoculated into the right scarified cornea of each of 2 rabbits (R 731 and R 668). Their left corneas were scarified and used as controls. In both rabbits a keratitis developed in twenty-four to forty-eight hours in the inoculated eye, while the control eye healed normally. One rabbit (R 731) died one month later with a severe hemorrhagic diarrhea and acute keratoconjunctivitis. The brain substance from the dead rabbit (R 731) was inoculated into the scarified cornea of a third rabbit (R 760), where it produced a keratitis. A culture of known herpes simplex virus was injected intracerebrally into the surviving rabbit (R 668) of the original pair. This rabbit lived, showing that it had developed an immunity to the virus of herpes simplex.

The patient's blood culture on the second day of hospitalization grew hemolytic Staphylococcus aureus and a hemolytic streptococcus, both of which were thought to be contaminants. A culture of material from an unruptured pustule exhibited the growth of hemolytic Staph. aureus. The sedimentation rate on the third day was 27 mm. per hour (Westergren). Blood urea, sugar, icteric index, total serum protein and nonprotein nitrogen determinations on the first, third and seventh days were all within normal limits. The carbon dioxide combining power of the blood was 40 volumes per cent on the third hospital day. Except for a faint trace of albumin on the first and fifth hospital days, the daily urinalysis revealed normal conditions.

The Wassermann and Kahn reactions of the blood were negative. Roentgenograms of the chest on the third and eighth days revealed normal conditions.

CASE 2.—*History.*—C. C., a white woman aged 35, a private patient, was first seen by one of us (L. P. B.) on May 7, 1946. At that time an eruption consisting of many discrete, slightly elevated, bright red maculopapules was present on her face and neck. Two or three of the lesions were crusted. She also had a typical lesion of herpes simplex on the left side of her lower lip. Her cervical and submaxillary nodes were enlarged, tender and painful. The oral temperature was 100 F., and she complained of general malaise of twenty-four hours' duration. A few days before, she had had a head cold for which she had taken acetylsalicylic acid and phenobarbital. The cutaneous manifestations were suggestive of a drug eruption, chickenpox in the early stage or a diffuse herpetic infection.

Past History.—The patient's past history revealed contact exposures to herpes labialis on April 22, 24, 26 and 30 and on May 3. It was on May 3 that she first noticed a herpetic lesion developing on the left side of her lower lip, and on May 4 a typical cold sore was present on that site. On May 5 two red spots appeared on her chin. By May 6 many red, slightly raised lesions were scattered over her entire face. The cervical and submaxillary lymph nodes had become painful and tender. She suffered from generalized aching pains, and on the evening preceding her visit to the physician's office her oral temperature had risen to 103 F.

There had been no known exposure to chickenpox or vaccinia. As a child, she had had chickenpox and a vaccination for smallpox. Her reaction had not been severe in either instance. No history of cutaneous allergy existed.

The patient was advised to go home to bed, to force fluids, to eat lightly and to apply a modified calamine lotion to her face. That evening her oral temperature arose to 102 F., she had a chill and her general malaise increased. The following day her temperature was 101 F., and the patient was hospitalized.

Physical Examination.—On admission to the hospital the patient was acutely but not seriously ill. The eruption, which was limited to the face and neck, was more profuse than when previously seen and consisted of many discrete, bright red maculopapules about 1 cm. in diameter. Some of these lesions were submounted by a small vesicle and resembled the lesions seen in chickenpox. One lesion had developed on each upper eyelid. There was no diffuse erythema, edema or tumefaction of the face. The throat was slightly injected, and the tonsils were moderately enlarged. No lesions of the mucous membrane were evident other than the original herpes simplex on the lower lip. General physical examination and urinalysis revealed normal conditions. The hemoglobin and erythrocyte count were also within normal limits. The leukocyte count was 7,000 with 60 per cent polymorphonuclear leukocytes, 2 per cent mononuclear leukocytes and 38 per cent lymphocytes.

Because of the varicelliform lesions, fever, general malaise and adenopathy, all of which had followed a herpes simplex lesion that developed after a contact exposure to herpes labialis, a diagnosis of systemic herpes simplex was made.

Treatment and Course of Disease.—Immediately after hospital examination, 0.1 cc. of moccasin venom (1:3,000) was injected intradermally. This dosage was repeated on the second, third and fourth hospital days. A 50 mg. tablet of diphenhydramine hydrochloride was also administered by mouth three times each day for four days. Phenolated lotion of calamine was applied locally, a light diet was prescribed and fluids were forced.

On the morning after admission to the hospital, (fifth day of the disease), the patient's temperature dropped to normal, where it remained thereafter. Her general malaise abated rapidly and the adenopathy subsided within two days. However, small numbers of scattered varicelliform lesions continued to appear singly or in crops of two or three on her face and neck for the next six days, while previous lesions crusted and healed. During the entire course of the eruption only a few lesions became umbilicated.

On the second hospital day fluid from one of the unruptured vesicles was inoculated into a scarified rabbit's cornea, and a typical herpetic keratitis developed.

The patient was discharged after eight days. By that time all but a few of the lesions had healed, leaving small, red macular areas. When the patient was examined ten days later, some redness persisted on the sites of the original lesions but no scarring was evident.

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[17] The Paul test and rabbit immunization tests (case 1) were done by Margaret Holden, Ph.D., Department of Bacteriology, Columbia University College of Physicians and Surgeons.

[18] Kelley, R. J.: Treatment of Herpes Simplex with Moccasin Venom, Arch. Dermat. & Syph. 38: 599-602 (Oct.) 1938.

COMMENT

Systemic herpes simplex (Kaposi's varicelliform eruption of proved herpes simplex virus origin) may occur in either serious or mild forms which vary mainly in the gravity of the symptoms, extent and severity of the eruption and duration of the illness. The serious form is more likely to attack persons with antecedent dermatoses. Cases 1 and 2 are typical examples of the clinical observations in the severe and mild types, respectively.

Characteristically, the severe form of the disease begins suddenly with general malaise and an abrupt rise in temperature (103 to 105 F.). The temperature remains elevated in a "picket fence" curve for eight to ten days and then falls by lysis or, at times, by crisis. During this period the patients are gravely ill. At the onset the cutaneous eruption is not diagnostic and may be mistaken for dermatitis venenata, atypical chickenpox or smallpox, impetigo contagiosa or a drug eruption. After two or three days the eruption becomes quite typical (see case 1), varying chiefly in extent and severity. At first the lesions appear in crops, then in decreasing numbers for ten to fourteen days. In some cases they may continue to appear for as long as twenty-one days. The vesicles and pustules crust or rupture, usually healing without scar formation. At first, probably due to the secondary infection of the cutaneous lesions, the leukocyte count may be slightly elevated, but after a few days it may drop to 3,000 or 4,000 with a relative lymphocytosis. Some infections are associated with stiff neck, adenopathy, incontinence of the urine and feces, anuria, otitis media, purulent rhinitis, conjunctivitis and corneal ulcers.

In the mild form of systemic herpes simplex the toxemia is not severe and may last no longer than four or five days. The temperature does not rise so high nor is the eruption so extensive. Generally the duration of the milder illness does not exceed a week or ten days.

It is doubtful if treatment alters the course of the disease other than in helping to control secondary infections and complications. In the past, most treatment has been limited to local applications of medicaments. The sulfonamide drugs taken internally have not been beneficial except in 1 case reported by Connor and Gonce in 1943.

Penicillin in case 1 did not influence the patient's illness except in the probable control of secondary infection. Possibly here, as in other virus infections, penicillin therapy is not effective.

After each injection of moccasin venom (case 1) there was a drop in temperature, and there was no further rise after the third injection. However, as the venom was not administered until the seventh day of hospitalization, its efficacy must be considered doubtful. In case 2 when the snake venom was given on the fourth day of the disease the temperature dropped (with no rises thereafter) to normal in twelve hours. These changes in temperature may or may not have been coincidental; hence, we consider that moccasin venom therapy merits further trial.

The effects of diphenhydramine hydrochloride in case 2 are difficult to evaluate because the patient was receiving snake venom simultaneously. All that can be said is that the systemic symptoms disappeared within twelve hours after treatment was begun. We also realize that case 2 was of such a mild type that the disappearance of the symptoms may have occurred in the natural course of the disease.

Our observation of the aforementioned cases leads us to believe that systemic herpes simplex is due to a hematogenous infection as well as to a widespread external inoculation of the virus and that anaphylaxis may play an important role in accounting for its severity.

SUMMARY AND CONCLUSIONS

Two cases of systemic herpes simplex (Kaposi's varicelliform eruption of proved herpes simplex virus origin) in adult women are reported. Case 1 represents the severe form of the disease occurring in a person with a preexisting chronic dermatitis. Case 2 typifies the mild form of the infection appearing in a person with no previous dermatosis after a known contact exposure to herpes labialis.

Results of treatment with penicillin and moccasin venom in case 1 and with moccasin venom and diphenhydramine hydrochloride ("benadryl hydrochloride") in case 2 are equivocal.

The conclusion is drawn that the disease is due to a systemic as well as a widespread cutaneous inoculation of the virus of herpes simplex.

Because of the systemic symptoms and the recovery of the virus of herpes simplex from the cutaneous lesions, the suggestion is made that those cases of Kaposi's varicelliform eruption from which the virus of herpes simplex is recovered, be called systemic herpes simplex.

120 East Seventy-Fifth Street.

Clinical Notes, Suggestions and New Instruments

TUBERCULOUS MENINGITIS AND MILIARY TUBERCULOSIS ARRESTED WITH STREPTOMYCIN

EMANUEL APPELBAUM, M.D.
and
CYRILLE HALKIN, M.D.
New York

Several investigators have shown that streptomycin possesses the ability to suppress a tuberculous process. However, the use of this antibiotic in tuberculous meningitis has resulted in most instances either in failure of response or in an unsatisfactory arrest of the disease, complicated by serious neurologic sequelae. Therefore it seems worth while to report a case of tuberculous meningitis associated with generalized miliary tuberculosis, in which complete clinical arrest followed the use of streptomycin.

REPORT OF CASE

T. E., a boy aged 9, was admitted to the Willard Parker Hospital on Sept. 1, 1946, with the complaints of fever, headache and vomiting of one week's duration. Two days before admission the child became somewhat disoriented. The past history revealed that in November 1945 the disease of the child was diagnosed as miliary tuberculosis of both lungs. The family history was relevant, since the patient's father died of pulmonary tuberculosis in 1944.

From the Bureau of Laboratories, New York City Health Department, and the Willard Parker Hospital.

We wish to express our gratitude to Miss Ruth Gosling and Mrs. Carolyn R. Falk of the Bureau of Laboratories, New York City Health Department, for valuable laboratory assistance, to Dr. Vera B. Dolgopol, Pathologist, Willard Parker Hospital, for the guinea pig necropsy studies, and to Dr. Edwin P. Kolb of the Suffolk Sanatorium for permission to use his data on the case.

Physical examination revealed a thin child who appeared chronically ill. The temperature was 103 F., the pulse rate 98 and the respiratory rate 26. The pharynx was moderately injected and showed evidence of a postnasal drip. There was a generalized lymphadenopathy. Over the right lung resonance was somewhat diminished and the breath sounds appeared harsh. Examination of the heart revealed no abnormalities. The abdomen was moderately spastic on the right side but was not tender. The spleen was not palpable. There was pronounced nuchal rigidity associated with positive Brudzinski and Kernig signs. The deep and superficial reflexes were active, and no pathologic reflexes were elicited. The child's mental state was clear.

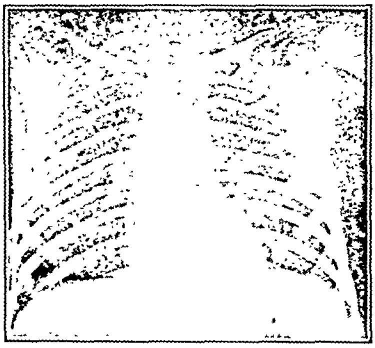

Fig. 1.—Roentgenogram of the lungs taken shortly after admission. Note hilar gland enlargement and extensive miliary infiltrations.

Urinalysis revealed a trace of albumin, an occasional hyaline cast and 8 to 10 white blood cells. The red blood cell count was 4,700,000, with 70 per cent hemoglobin; the white blood ount was 8,500, with 78 per cent polymorphonuclear leukocytes, 0 per cent lymphocytes and 2 per cent monocytes. The spinal fluid on September 3 was clear, with 295 cells, predominantly mononuclears; 84 mg. of protein and 39 mg. of sugar, per hundred cubic centimeters, and no organisms by smear or culture. However, Mycobacterium tuberculosis were found by smear and culture in the second specimen of spinal fluid obtained on September 5. A roentgenogram of the chest disclosed hilar gland enlargement and extensive miliary infiltrations of both lungs (fig. 1). A diagnosis of tuberculous meningitis and miliary tuberculosis was thus established.

On the fourth day after admission the child's condition became decidedly worse, evidenced by pronounced irritability, apathy, grinding of the teeth and carphologia. Streptomycin therapy was instituted on Sept. 6, 1946. The child received 200,000 units of the antibiotic intrathecally once a day. In addition 100,000 units were injected intramuscularly every three hours. Except for an occasional minor change, this scheme of dosage was maintained for twenty-six days.

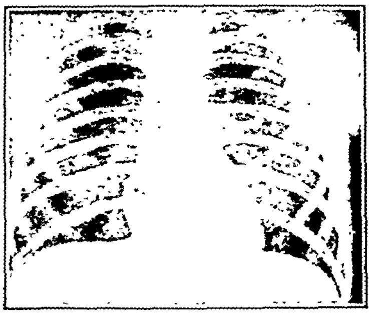

Fig. 2.—Roentgenogram of the lungs taken Jan. 11, 1947, after four months of streptomycin therapy. Except for a small residual focus in the left lung there is complete clearing of the infiltrations.

On September 8, two days after the streptomycin treatment was started, there was a striking improvement in the mental state. However, the signs of meningeal irritation persisted and an irregularly septic type of fever, ranging between 99 and 103 F., continued. The observations in the lungs, clinical and radiographic, also remained unchanged.

The child continued to improve, developed a sense of well-being and gained weight. On October 2, twenty-seven days after treatment was started, the intrathecal administration of streptomycin was discontinued. At the same time the systemic use of the drug was increased to 1,000,000 units daily and administered for five days by continuous intramuscular infusion and subsequently by interrupted injections. The temperature became low grade in type. Repeated roentgenograms of the chest, however, disclosed little change.

On October 9 the child again appeared drowsy and irritable. Two hundred thousand units of streptomycin were therefore injected intraspinally. Since the temperature rose to 101.4 F. following this treatment, it was decided to abandon the use of the drug intrathecally but to continue the intramuscular therapy.

Cerebrospinal Fluid Observations

Date	Appearance	No. of Cells	Predominating Type of Cell	Protein, Mg./100 Cc.	Sugar, Mg./100 Cc.	Smear	Culture
9/ 3/46	Clear	295	Mononuclears	84	39	Neg.	Neg.
9/ 5/46	Clear	160	Mononuclears	66	46	Acid-fast bacilli	Pos. T.B.
9/ 6/46	Blood tinged	135	Mononuclears	92	38	Neg.	Pos. T.B.
9/ 7/46	Clear, web	...	Mononuclears	122	70	Neg.	Neg.
9/ 8/46	Clear, web	530	Mononuclears	112	66	Neg.	Neg.
9/ 9/46	Clear, web	380	Mononuclears	144	75	Neg.	Neg.
9/10/46	Hazy, web	1,805	Mononuclears	168	68	Neg.	Neg.
9/11/46	Hazy, web	280	Mononuclears	170	55	Neg.	Neg.
9/12/46	Hazy	625	Polynuclears	170	53	Neg.	Neg.
9/13/46	Hazy, web	1,500	Polynuclears	196	71	Neg.	Neg.
9/14/46	Hazy	850	Polynuclears	274	39	Neg.	Neg.
9/15/46	Hazy, web	265	Degenerated cells	260	77	Neg.	Neg.
9/16/46	Hazy, blood tinged	1,130	Mononuclears	420	71	Neg.	Neg.
9/17/46	Hazy, slightly yellow	835	Polynuclears	360	59	Neg.	Neg.
9/18/46	Hazy, web	635	Mononuclears	330	80	Neg.	Neg.
9/19/46	Hazy, web	475	Mononuclears	310	59	Neg.	Neg.
9/20/46	Bloody	...	....	440	75	Neg.	Neg.
9/21/46	Blood tinged, web	...	....	480	75	Neg.	Neg.
9/22/46	Blood tinged, web	...	Polynuclears	450	71	Neg.	Neg.
9/23/46	Hazy, yellow, web	610	Polynuclears	470	62	Neg.	Neg.
9/24/46	Hazy, yellow, web	1,770	Polynuclears	560	69	Neg.	Neg.
9/25/46	Hazy, yellow, web	515	Polynuclears	420	86	Neg.	Neg.
9/27/46	Hazy, yellow	600	Polynuclears	424	60	Neg.	Neg.
9/28/46	Hazy, web	...	Polynuclears	435	75	Neg.	Neg.
9/29/46	Hazy, web	400	Polynuclears	510	80	Neg.	Neg.
9/30/46	Hazy, slightly yellow, web	1,145	Polynuclears	310	100	Neg.	Neg.
10/ 1/46	Hazy, yellow, web	735	Polynuclears	710	72	Neg.	Neg.
10/ 6/46	Clear, web	70	Mononuclears	270	65	Neg.	Neg.
10/ 9/46	Clear, web	...	Mononuclears	224	113	Neg.	Neg.
10/16/46	Hazy	145	Mononuclears	340	72	Neg.	Neg.
10/23/46	Hazy	310	Mononuclears	232	92	Neg.	Neg.
10/30/46	Blood tinged	750	Mononuclears	410	72	Neg.	Neg.

Clinical improvement was soon in evidence again. Particularly striking were the child's alertness and playfulness. The roentgenogram of the chest also disclosed a slight clearing. In an attempt to accelerate the pulmonary improvement the daily dose of systemic streptomycin was increased on October 18 to 2,000,000 units. This dosage was continued for twelve days.

On October 31 the patient was transferred to another institution, where the intramuscular injections of streptomycin were continued for approximately four months. There was one short interruption of three days, when the injection of the drug was omitted because of the development of a transitory rash and dizziness. The daily dosage of streptomycin from

Nov. 1, 1946 to Feb. 28, 1947 varied from 600,000 to 1,600,000 units. Under this regimen there was well defined and progressive improvement. The child gained weight, was active and playful and appeared normal in all respects. A roentgenogram on Jan. 11, 1947 showed complete clearing of the miliary tuberculosis and only a small residual focus in the left lung (fig. 2).

As will be noted in the accompanying table, the fourth specimen of spinal fluid, obtained on Sept. 7, 1946, as well as all subsequent specimens, did not show the presence of organisms by smear or culture and had a normal sugar content. On the other hand, the elevated protein and decided pleocytosis persisted.

There were some other laboratory data worthy of note. Several specimens of urine obtained during the course of therapy showed a moderate amount of albumin and an occasional hyaline and granular cast. The streptomycin sensitivity of the Myco. tuberculosis isolated from the spinal fluid was 0.095 units per cubic centimeter. Frequent determinations were made on the concentrations of streptomycin in the blood and spinal fluid. The blood levels of the drug ranged between 1 and 31 units and the spinal fluid levels between 1 and 16 units per cubic centimeter. Tuberculin-negative guinea pigs inoculated with the spinal fluid culture subsequently became tuberculin-positive and died one month after the inoculation. At necropsy extensive tuberculous lesions, including the presence of Myco. tuberculosis, were found in the spleen, liver, lymph nodes and subcutaneous tissue.

A follow-up on May 23, 1947, approximately nine months after the onset of his illness, found the patient in excellent condition. The child was free of symptoms and appeared normal physically and mentally.

COMMENT

In this case the diagnosis of tuberculous meningitis was established by the clinical observations and confirmed by the spinal fluid studies. In addition, the roentgenogram revealed the presence of pulmonary miliary tuberculosis. The results of the guinea pig inoculations furnished absolute proof that the organisms isolated from the spinal fluid were virulent Myco. tuberculosis.

It has become known that the use of streptomycin in tuberculous meningitis may produce temporary improvement and on infrequent occasions lead to an arrest of the disease. However, most of the cases in the latter group have shown serious neurologic residua. In the case reported herein the disease was arrested completely without any sequelae. It is likely that this excellent result was due in no small measure to certain favorable factors, such as the institution of the streptomycin therapy early in the disease, the pronounced sensitivity of the organism to the drug and the adequate concentrations of the antibiotic in the blood and spinal fluid.

It is also of interest to note that the streptomycin was well tolerated by our patient during the long course of treatment. Except for one short episode of dizziness and the occurrence of a transitory rash, there were no serious untoward reactions. Because of the presence of albuminuria and cylindruria before the initiation of streptomycin therapy it is difficult to evaluate the significance of these urinary observations in subsequent specimens. However, as pointed out by Farrington and associates,[1] the development of cylindruria without other evidence of renal disease is not in itself a reaction of serious significance.

The persistence of the elevated protein level and of the pleocytosis in the spinal fluid was undoubtedly due to the intrathecal administration of the streptomycin. Unfortunately, a spinal tap was not performed late in the convalescence to recheck these determinations.

SUMMARY

In a case of tuberculous meningitis associated with miliary tuberculosis complete clinical arrest followed a long and intensive course of streptomycin therapy. The drug was well tolerated, and there were no neurologic residua.

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1. Farrington, R. F.; Hull-Smith, H.; Bunn, P. A., and McDermott, W.: Streptomycin Toxicity, J. A. M. A. **134:** 679-688 (June 21) 1947.

STREPTOMYCIN IN TUBERCULOUS MENINGITIS

C. P. MEHAS, M.D.
and
WAYNE E. TRUAX, M.D.
Pontiac, Mich.

Tuberculous meningitis has always carried a hopeless prognosis. The use of streptomycin in the treatment of this disease has already altered the outlook. Waksman and his associates[1] reported the isolation of a new antibiotic agent in 1944. Feldman and Hinshaw reported in 1944[2] its apparent ability to suppress the growth of Mycobacterium tuberculosis in guinea pigs. Since that time several reports in the literature have confirmed the bacteriostatic action of streptomycin on Myco. tuberculosis. Its first successful use in tuberculous meningitis was reported by Cooke, Dumphy and Blake,[3] who treated an infant 1 year of age. Krafchik[4] reported another apparent arrest in a child 5 months of age, significant in that no residual neural damage was noted. Recently Hinshaw, Feldman and Pfeutze[5] reported a series of 9 cases of combined miliary and meningeal tuberculosis in 4 of which the patients survived. In all their successful cases the patients were treated by intramuscular administration of 1 to 3 Gm. of streptomycin daily, combined with the intrathecal administration of 100 to 300 mg. of the agent every twenty-four hours. The importance of concurrent intrathecal administration with intramuscular administration of the drug has been emphasized by Hinshaw and his group. They state, "None of the cases who died had received intrathecal therapy, and none of those who received intrathecal therapy have thus far died."[5] Of the 4 patients surviving in their series, 1 is blind, 1 has pronounced cerebellar symptoms, 1 is deaf and 1 is normal. They consider that the deafness may be due to streptomycin. This particular toxic effect of the drug has been noted by almost all who have used it over long periods.[6] Vertigo and tinnitus are often accompaniments of the deafness. Fowler[6a] has shown that damage is not always permanent and that return to normal may be expected in many instances after stopping the administration of the drug.

We know that there are numerous cases of tuberculous meningitis being treated throughout the country which have not, as yet, been reported but will be very soon. We offer this case report concerning an adult patient with tuberculous meningitis and pulmonary tuberculosis whom we treated with streptomycin in the hope that our experience may be of some assistance in treatment now in progress. We consider that this case shows not only that streptomycin may alter the course of tuberculous meningitis but also that intrathecal administration alone, though not sufficient to totally suppress the disease, can suppress it for a prolonged period, in this case, without producing a resistant strain of the organism. While definite allergic and toxic effects of the drug are demonstrated, the possibility that these changes may not be permanent is also shown.

REPORT OF CASE

History.—Mrs. F. A., a white woman aged 31, was admitted to the Oakland County Tuberculosis Sanatorium July 3, 1946, complaining of pleuritic pain in the lower part of the left lung of five months' duration. She also had fever, night sweats, a productive cough and a loss of weight of 15 pounds (7 Kg.).

From the Oakland County Tuberculosis Sanatorium.

Acknowledgment is due to Karl H. Pfeutze, M.D., Cannon Falls, Minn., for invaluable advice.

1. Schatz, A.; Bugie, E., and Waksman, S. A.: Streptomycin, a Substance Exhibiting Antibiotic Activity Against Gram-Positive and Gram-Negative Bacteria, Proc. Soc. Exper. Biol. & Med. **55:** 66 (Jan.) 1944.
2. Feldman, W. A., and Hinshaw, H. C.: Effects of Streptomycin on Experimental Tuberculosis in Guinea Pigs, Proc. Staff Meet., Mayo Clin. **19:** 593 (Dec. 27) 1944.
3. Cooke, R. E.; Dumphy, D. L., and Blake, F. G.: Streptomycin in Tuberculous Meningitis: A Report of Its Use in a One Year Old Infant, Yale J. Biol. & Med. **18:** 221 (Jan.) 1946.
4. Krafchik, L. L.: Tuberculous Meningitis Treated with Streptomycin, J. A. M. A. **132:** 375 (Oct. 19) 1946.
5. Hinshaw, H. C.; Feldman, W. H., and Pfeutze, K. H.: Treatment of Tuberculosis with Streptomycin, J. A. M. A. **132:** 778 (Nov. 30) 1946.
6. (*a*) Fowler, E. P., and Seligman, E.: Otic Complication of Streptomycin Therapy, J. A. M. A. **133:** 87 (Jan. 11) 1947. (*b*) Brown, H. A., and Hinshaw, H. C.: Toxic Reaction of Streptomycin on Eighth Nerve Apparatus, Proc. Staff Meet., Mayo Clin. **21:** 347 (Sept. 4) 1946.

One month before admission she had been hospitalized elsewhere and a left pleural effusion had been aspirated. She was told that she had tuberculosis. The history was essentially negative except for painful menses, heavy flow and temperature elevation during menses.

Physical Examination.—The patient was a well developed white woman who had no significant physical abnormalities except for flatness to percussion with absent breath and voice sounds over the base of the left lung. Pelvic examination revealed an anteverted uterus with profuse yellowish white cervical discharge, which proved to be nonspecific.

Laboratory Data.—Roentgen Examination: In the right lung a mottled type of infiltration was noted in the first interspace anteriorly extending up to the apex. This was extremely suggestive of an active exudative tuberculosis. In the left lung a concave opacity was observed to extend out from the hilum to the base and up to the eighth rib posteriorly, contributing to a definite obliteration of the costophrenic angle.

Summary: This was apparently a case of bilateral pulmonary tuberculosis complicated by pleural effusion on the left.

Hematologic Study: The hemoglobin level was 78 per cent. The red blood cell count was 4,010,000; the white count 6,050, with 60 per cent polymorphonuclears; 34 per cent lymphocytes; 3 per cent monocytes, and 3 per cent eosinophils. The color index was 0.9. Urinalysis was negative; the Kahn test was negative; the sedimentation rate was 51 mm. in one hour (Westergren). The sputum culture was positive for acid-fast bacilli.

Course in Hospital.—The patient was placed on a strict regimen of rest in bed and a repeat roentgenogram of the chest was taken in six weeks. This showed slight resolution of the pleural effusion on the left. There was essentially no change on the right. The case was presented at a surgical conference, and a temporary left phrenic crush was thought to be the procedure of choice. However, on September 19, forty-eight hours before planned surgical intervention, the patient began to complain of indefinite pain in the lower part of the abdomen, associated with severe headache and nausea. Forty-eight hours later definite nuchal rigidity developed, accompanied by an elevation of the temperature to 103 F., vomiting, nausea, mental confusion and hyperactive reflexes. A lumbar puncture at this time revealed an increase in the cerebrospinal fluid pressure. The fluid was clear, with a cell count of 29 (lymphocytes predominating), a globulin reading of 2 plus and a normal sugar determination.

A tentative diagnosis of tuberculous meningitis was made. On October 2 another lumbar puncture revealed the fluid to be cloudy; the cell count was 236 with polymorphonuclear cells predominating, globulin 3 plus and sugar absent. A well developed pellicle which formed on the fluid on standing revealed typical acid-fast bacilli on direct smear. The cultural characteristics on mediums and the pathologic changes in the guinea pig which this specimen ultimately revealed were typical of Myco. tuberculosis. During this interval the patient continued to regress rapidly with clearly marked symptoms of tuberculous meningitis. On October 3 a small supply of streptomycin was made available,[7] and daily intrathecal administration of 200 to 250 mg. was begun with the intention of giving additional intramuscular injections of the drug when it became available. Within a few days after the starting of streptomycin therapy the patient began to show clinical improvement with clearing of stupor and lessening of meningismus. However, vomiting continued, and it was necessary to administer intravenous amino acids and dextrose to sustain nutrition and fluids until the patient could increase her own intake. Meanwhile, because of the difficulties encountered in obtaining streptomycin we were forced to use intraspinal administration alone of 250 to 300 mg. daily for a total period of forty-three days. During this interval, cells in the spinal fluid had risen rapidly to 1,044 with lymphocytes predominating on the tenth day of treatment (see the accompanying table) and then gradually receded to 54 cells on the twenty-third day, at which time the globulin was positive, the sugar reaching 44.5 mg. per hundred cubic centimeters. On the twenty-fourth day of treatment the cell count gradually started to rise. By the forty-third day the count had reached 491 cells and a web formed on standing; the sugar, however, remained normal. The patient's clinical condition began to retrogress rapidly with spiking temperatures, stupor, pronounced muscular rigidity and headache. Fortunately at this time an adequate supply of the drug was made available and intramuscular streptomycin, 2 Gm. daily, was begun. In forty-eight hours clinical symptoms of meningitis began to disappear and the patient was greatly improved mentally with disappearance of neurologic symptoms. Along with the intramuscular dosage the intrathecal administration of the drug was continued, with 300 mg. given every other day. The intrathecal injections continued without incident until January 10, when it was observed that the patient's temperature was 103 F. and she became stuporous and mentally confused after a spinal injection. This occurred with each spinal injection and was considered to be a toxic reaction due to direct stimulation by streptomycin on the central nervous system, and the intraspinal administration of the drug was stopped. The patient became completely afebrile

Cerebrospinal Observations and Streptomycin Therapy

Date	Character	Pellicle	Cell Count	Sugar*	Bacteriologic	Sputum	Dosage with Streptomycin	Comment
9/ 5/46	Clear	Absent	29	Normal	....	Positive		
10/ 2/46	Cloudy	Present	236	Absent	Positive direct smear and culture	Positive	250 to 300 mg. intraspinally	
10/ 7/46	Cloudy	Present	664	Absent	Positive culture guinea pig	Positive	250 to 300 mg. intraspinally	
10/11/46	Cloudy	Present	1,044	Absent	Negative	Positive	250 to 300 mg. intraspinally	
10/12/46	Cloudy	Present	485	....	Negative	Positive	250 to 300 mg. intraspinally	
10/16/46	Cloudy	Present	368	....	Negative	Positive	250 to 300 mg. intraspinally	
10/18/46 through 10/22/46	Clear	Absent	200	....	Negative	Positive	250 to 300 mg. intraspinally	
10/22/46	Clear	Absent	54	44.5 mg.	Negative	Negative	150 to 300 mg. intraspinally	
10/25/46	Clear	Absent	59	....	Negative	Negative	150 to 300 mg. intraspinally	
10/28/46	Clear	Absent	90	....	....	....	....	Refractory period
11/ 6/46	Clear	Absent	91					
11/ 7/46	Clear	Absent	124					
11/12/46	Clear	Absent	206					
11/15/46	Cloudy	Web positive	461	55.5 mg.	Negative	Negative	250 mg. intraspinally, 2 Gm. intramuscularly	
11/18/46	Cloudy	....	256	....	....	....	....	Combined therapy intraspinally and intramuscularly
11/23/46	Clear	Web absent	161	Normal	Negative	Negative	Same	
12/ 3/46	Clear	Absent	43					
12/31/46	Clear	Absent	26					
6/26/47 through 8/ 1/47	Clear	Absent	5 to 10					

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7. William A. Hudson, M.D., Detroit, provided the first supply of streptomycin.

thereafter. Another toxic or allergic reaction noted was the gradual increase in eosinophils in the peripheral blood, rising from a level of 3 to 6 per cent to a decided elevation of 22 per cent on February 14. At the peak of this eosinophilia the patient had one generalized convulsion lasting five minutes, typically epileptiform in type. The drug was not discontinued, however, and the eosinophilia gradually subsided to normal. Administration of the drug was stopped on March 25 because of local reaction to the intramuscular injection marked by a localized induration, swelling and pain at the site. During the last two months of therapy definite objective impairment of hearing, more pronounced on the left, was noticed by the patient and by observers. Audiograms taken one week after the cessation of therapy, on April 2, 1947, and six weeks later, on May 27, 1947, revealed the following:[8]

The tympanic membranes were of normal appearance. Both eustachian tubes were patent. The tuning fork test of Weber was lateralized to the right. With the Rinne test, bone conduction was greater than air conduction on both the right and the left. The Schwabach test showed decidedly reduced times on the left and reduced times on the right. The 2048 tuning fork air conduction on the left was greatly reduced, and on the right, reduced.

The conclusion was that the patient presented a definite perceptive hearing loss, especially in the left ear. The audiogram revealed 19.3 per cent loss in the right ear and 89.8 per cent in the left ear on April 2, 1947. On May 27, 1947 the right ear revealed a hearing loss of 13.8 per cent and the left ear 71.0 per cent. This was a definite improvement in hearing over the audiogram of April 2, 1947.

For the first few weeks after starting the patient on exercise there was noted a definite ataxic steppage gait with obvious equilibrial disturbance. The Romberg sign was definitely positive, the patient falling to the right. There had been no adiadokokinesis or difficulty in performing the finger to nose test or past pointing. Now, three months after the cessation of treatment the gait is nearly normal, the Romberg sign is still slightly positive, and equilibrium has decidedly improved so that the patient can walk to the bathroom unassisted. Besides the definite neural involvement on the left, as already noted, the other residual damage to the central nervous system is indicated by a lateral nystagmus on the left.

At the present time the spinal fluid values are within nearly normal limits, with 6 to 9 cells, a total protein level of 50.6 mg. and sugar 55 to 60 mg. per hundred cubic centimeters. Positive cultures had not been obtained since the start of streptomycin therapy.

The pulmonary status of the patient must be mentioned. Sputum cultures became negative two months after treatment began. The pleural effusion on the left has now completely absorbed and the infiltration on the right has cleared and stabilized. The total period of treatment was one hundred and seventy-five days, and 282 Gm. of streptomycin were given. Seventy-one spinal punctures were performed.

COMMENT

The prognosis of tuberculous meningitis has been a hopeless one until the advent of streptomycin. The value of this drug in altering the course of this disease has been previously shown in 2 children and in 4 adults coincidentally affected with miliary tuberculosis. A case is reported of proved tuberculous meningitis in an adult female with no evidence of miliary disease whose course of disease has been significantly altered by the use of streptomycin, both intramuscularly and intraspinally administered. It illustrates the importance of early diagnosis and treatment. It also demonstrates that intraspinal (thecal) streptomycin alone, though insufficient to completely halt the progress of the disease, can suppress the disease for a significant period without, in this case, producing a resistant strain of the organism. Certain toxic effects of the drug are illustrated, these being primarily due to its effect on the central nervous system.

CONCLUSION

Streptomycin administered early in the course of tuberculous meningitis is capable of arresting the process.

Council on Pharmacy and Chemistry

REPORT OF THE COUNCIL

The Council has authorized publication of the following statement.

Austin Smith, *Secretary.*

SULFONAMIDES FOR LOCAL APPLICATION DELETED FROM N. N. R.

Nearly two years ago the Council on Pharmacy and Chemistry published a report on the "Dangers from External Use of Sulfonamides,"[1] citing the evidence then available that the promiscuous use of these drugs in the form of ointments, lotions, powders and other preparations suitable for local application resulted in the sensitization to these drugs of a high proportion of those treated. Since that time, evidence has continued to accumulate confirming the views then expressed that the local application of these drugs should be limited to the relatively few cutaneous infections known to respond to this form of therapy and that such medication should be administered only under the careful supervision of a physician. Recently Lyons[2] has emphasized the reasons for abandoning the local use of the sulfonamides in treating wound infections, citing the experience gained in World War II which showed that these drugs delayed healing and were otherwise definitely deleterious, and furthermore that these drugs were ineffective for the purpose for which they were used, namely, wound sterilization.

In dermatologic practice it has been found that systemic therapy, preferably with an antibiotic such as penicillin, or local therapy with antibacterial agents less prone to produce sensitivity, will effectively control most cutaneous infections formerly treated with sulfonamides and in general is more effective and far less hazardous to the patient. In view of these facts the Council voted to delete from the 1947 edition of N. N. R. the discussion on the local use of the sulfonamides and to substitute the following statement: "Experience gained in World War II seems to indicate that the use of crystalline sulfonamides as topical agents was not very successful in the management of wound infection or in treatment of infections of the skin or mucous membrane. The routine use of sulfonamides as topical applications in wounds, burns and in superficial infections is therefore to be discouraged."

During its consideration of the foregoing statement the Council consulted thirty-six physicians representing the leading authorities in several branches of medicine in which sulfonamide therapy might be widely used. The consensus clearly revealed that there was no need for continuing in New and Nonofficial Remedies sulfonamides intended for topical therapy. As a consequence, the acceptance of such preparations has been rescinded and the firms concerned have been notified of this action.

Pertinent also is the resolution adopted by the Section on Dermatology and Syphilology of the American Medical Association at its 1944 session condemning the indiscriminate local use of sulfonamides in diseases in which other ordinarily less harmful remedies are equally efficacious.[3] The American Dermatological Association has also adopted a similar resolution.

The Council believes it necessary to emphasize again the potential hazards of the indiscriminate topical use of sulfonamide preparations. Inquiries are being received concerning the local use of sulfonamides in conditions for which there is no evidence of their value, such as hair tonics to control dandruff and promote growth of new hair, in shave creams to prevent infection, and in other equally inconsequential preparations. Not only are the sulfonamides ineffective in such preparations, but their use in any concentration represents a real danger to the user for three reasons: (1) the substitution of an ineffective remedy for one which might be of value, (2) the possibility, now widely recognized, of permitting the development of sulfonamide resistant organisms and (3) the development of cutaneous sensitization, thus preventing the use of sulfonamides in serious conditions for which these drugs are known to be effective.

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[8] John C. Stageman, M.D., Pontiac, Mich.

[1] Dangers from External Use of Sulfonamides, Report of the Council, J. A. M. A. **128**: 1024 (Aug. 4) 1945.

[2] Lyons, Champ: Chemotherapy in the Management of Wounds, J. A. M. A. **133**: 215 (Jan. 25) 1947.

[3] Resolutions on Use of Sulfonamides, J. A. M. A. **129**: 1194 (Dec. 22) 1945.

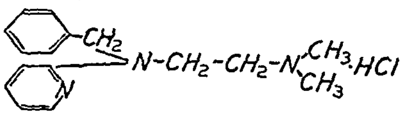
NEW AND NONOFFICIAL REMEDIES

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

Austin Smith, M.D., *Secretary.*

TRIPELENNAMINE HYDROCHLORIDE.

—Pyribenzamine Hydrochloride-Ciba. — N,N-dimethyl-N′-benzyl-N′-(α-pyridyl) ethylenediamine hydrochloride. — Beta-dimethylaminoethyl-2-pyridyl-benzyl ammonium chloride.—$C_{16}H_{22}N_3Cl$.—*M. W. 291.84.* The structural formula of tripelennamine hydrochloride may be represented as follows:



Actions and Uses.—Tripelennamine has the capacity to antagonize many of the pharmacologic effects of histamine. It prevents histamine-induced spasm of smooth muscle and it protects guinea pigs exposed to inhalation of nebulized histamine. Tripelennamine provides adequate protection to guinea pigs injected intravenously with lethal doses of histamine. If administered prophylactically to sensitized guinea pigs, it prevents anaphylaxis to subsequent injections of antigen.

Tripelennamine has been found useful in the treatment of urticaria or seasonal allergic rhinitis and appears to be useful in treating about half of those patients suffering from nonseasonal allergic rhinitis and bronchial asthma. It may also be useful in other allergic disorders, but greater clinical experience necessary before its precise role in the treatment of these conditions can be determined.

Tripelennamine does not affect the underlying allergic state, and therefore cessation of medication while the patient is still exposed to the allergen usually results in a prompt return of symptoms.

Approximately 30 per cent of patients experience side effects of varying degrees of severity following medication with tripelennamine. The most frequent side effect is that of drowsiness. It is important, therefore, to observe caution in administering sedatives or hypnotics to persons under treatment with this drug. Other reactions which have been observed are nausea, headache, dizziness, dryness of the mouth, nervousness and occasionally abdominal discomfort.

Dosage.—The smallest dose which will control the symptoms should be used. Treatment may be started with 50 mg. by mouth four times daily, preferably after meals. If symptoms are controlled, the dosage is reduced to 50 mg. twice daily or 25 mg. four times daily. Lower doses may be adequate. If symptoms are not controlled, and in the absence of side effects, the dosage may be increased to 100 or 150 mg. four times daily.

Tests and Standards.—

Tripelennamine hydrochloride occurs as a white crystalline powder possessing a bitter taste. It melts in the range 189-192.5 C. It is very soluble in water, soluble in alcohol and in chloroform, and practically insoluble in benzene and in ether. The *pH* of a 10 per cent solution is from 6.4 to 6.6.

Acidify 2 cc. of a 1 per cent solution of tripelennamine hydrochloride with 2 drops of nitric acid. Add 5 drops of silver nitrate solution: a white precipitate develops, which is redissolved on the addition of a few drops of ammonium hyroxide.

Add 3 drops of saturated Reinecke's salt solution to 2 cc. of a 1 per cent aqueous solution of tripelennamine hydrochloride: a flocculent, pink precipitate develops.

Prepare the dipicrate of tripelennamine as described in the assay: the tripelennamine dipicrate melts at 185-190 C.

Add 3 cc. of sulfuric acid to 0.1 Gm. of tripelennamine hydrochloride: a yellow color develops which turns muddy brown with a definite greenish cast on standing (*distinction from benadryl hydrochloride*).

Dry 0.2 Gm. of tripelennamine hydrochloride, accurately weighed, in vacuum over phosphorus pentoxide at room temperature for twenty-four hours: the loss in weight does not exceed 0.5 per cent.

Ash about 0.2 Gm. of tripelennamine hydrochloride, accurately weighed: the amount of residue is not more than 0.3 per cent.

Weigh, accurately, about 100 mg. of tripelennamine hydrdochloride and transfer to a 100 cc. beaker. Dissolve the salt in 50 cc. of water to which 4 drops of sulfuric acid has been added and add slowly, while stirring, 25 cc. of a filtered saturated solution of picric acid. Allow the mixture to stand for two hours, filter through a tared Gooch crucible, dry at 100 C. for two hours, cool and weigh. Each gram of tripelennamine dipicrate is equivalent to 0.40896 Gm. of tripelennamine hydrochloride: the tripelennamine hydrochloride content is not less than 98 per cent nor more than 102 per cent.

Tripelennamine Hydrochloride Tablets

Weigh ten tablets and grind in a mortar. Extract about 100 mg. of the powdered tablet mixture with two 25 cc. portions of chloroform. Centrifuge, decant the chloroform solution of tripelennamine hydrochloride and evaporate to dryness on a steam bath: the resulting crystals melt at 185-191.5 C.

Weigh, accurately, about 0.4 Gm. of the pulverized tablets and suspend in 25 cc. of water containing 2 drops of sulfuric acid in a 50 cc. centrifuge tube. Set the suspension aside for about fifteen minutes, stirring frequently. Centrifuge for about ten minutes; then decant the aqueous layer into a 100 cc. beaker. Add 25 cc. of water containing 2 drops of sulfuric acid to the residue in the centrifuge tube. Stir and mix thoroughly, set the suspension aside for fifteen minutes, stirring frequently, and again centrifuge. Add the supernatant liquid to the first extract in the 100 cc. beaker. Repeat the extraction for a third time as described previously and add the supernatant liquid to the other extracts. Add slowly to the combined extracts, while stirring, 25 cc. of a filtered saturated aqueous picric acid solution. Let the suspension stand for two hours, filter on a tared Gooch crucible, dry at 100 C. for two hours, cool and weigh. Each gram of tripelennamine dipicrate is equivalent to 0.40896 Gm. of tripelennamine hydrochloride: the tripelennamine hydrochloride content is not less than 95 per cent nor more than 105 per cent.

Ciba Pharmaceutical Products, Inc., Summit, N. J.

Tablets Pyribenzamine Hydrochloride: 50 *mg.*

U. S. patent 2,406,594.

SUSPENSION OF EPINEPHRINE IN OIL 1:500

(See New and Nonofficial Remedies, 1946, p. 296).

The following dosage form has been accepted:

Winthrop Chemical Co., Inc., New York

Suprarenin in Oil 1:500: 1 cc. ampuls. Each cubic centimeter contains 2 mg. Suprarenin (base) in sesame oil.

Council on Physical Medicine

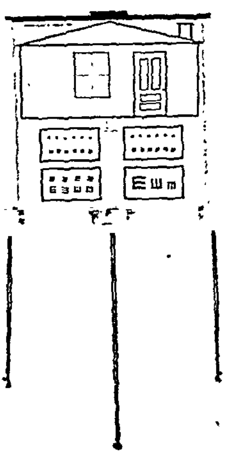
The Council on Physical Medicine has authorized publication of the following report.

Howard A. Carter, *Secretary.*

MASSACHUSETTS VISION TEST ACCEPTABLE

Distributor: Welch Allyn Company, Auburn, N. Y.

The Massachusetts Vision Test developed by the Division of Child Hygiene, Massachusetts Department of Public Health, is designed to simplify screening examinations of the eyes of school children especially in the primary grades. This form of the Massachusetts Vision Test supersedes the form whose acceptance by the Council was reported in The Journal of the American Medical Association May 1, 1943.



Massachusetts Vision Test

The redesigned instrument consists of screening tests for far and near vision, vertical and horizontal muscle balance for distance and near and hyperopic astigmatic errors. The carrying case, 29 by 7½ by 5¼ inches (74 by 19 by 13 cm.) also serves as a stand for the test charts and as a container for the muscle and near vision tests.

In a clinic acceptable to the Council the instrument was used experimentally for a period of one month. The Massachusetts Vision Test was found to be constructed on sound optical and physiologic principles and the mechanical construction was sturdy. Its successful use requires preferably a person experienced in the handling of children as well as in visual testing.

The Council on Physical Medicine voted to include the Massachusetts Vision Test in its list of accepted devices.

DISINFECTAIRE—WITHDRAWAL OF ACCEPTANCE

Manufacturer: The Art Metal Company, 1814 East 40th Street, Cleveland.

In The Journal, Jan. 15, 1944 "Disinfectaire-Ultraviolet Germicidal Units" were accepted. These lamps were accepted for disinfecting the air in hospitals, baby cubicles and operating rooms. The acceptance was limited to these installations.

An envelope stuffer entitled "Purify the Air You Breathe with Electronic Air Disinfection—Install Disinfectaire" came to the attention of the Council In the opinion of the Council the folder contained misleading claims. In the advertisement the lamp was recommended for installation in homes, schools, factories, stores, offices, theaters, restaurants and cafeterias. In view of the evidence coming to its attention the Council was not convinced that the disinfecting ultraviolet lamps are of significant value in the aforementioned installations.

The Art Metal Company was informed of the objectionable advertising matter. The firm replied, in part, "We believe that the weight of data obtained from practical field experience adequately supports any claims that we may make concerning our products." The firm further stated that ". . . we see no reason to alter the advertising and promotional material."

The Council on Physical Medicine after due consideration voted to withdraw the Disinfectaire Ultraviolet Germicidal Units from its list of accepted devices.

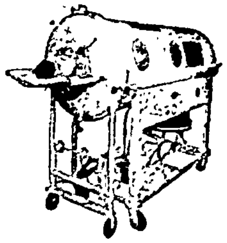
FABRIKATOR RESPIRATOR ACCEPTABLE

Manufacturer: Fabrikators Inc., of Mass., 19 Walnut Street, Boston 32, Mass.

The Fabrikator respirator is a device designed to produce artificial respiration simulating natural breathing. It accommodates either 1 adult only or 2 children at the same time.

Description: The apparatus functions by alternately producing suction (subatmospheric) and atmospheric pressure in the chamber. The lungs are inflated during suction and passively deflated during the atmospheric phase of pressure. Positive pressure may be used to assist exhalation The number of respirations per minute ranges approximately from fourteen to twenty-eight and any point between these settings.

The unit consists of a cylindric steel chamber mounted on a welded steel framework, which also supports the operating mechanism. The chamber contains a cot attached to the removable end closure. Casters on the legs of this closure and on the cot facilitate rolling the cot from the chamber and tilting the chamber. The respirator is 58 inches high, 85 inches long and 29 inches wide (internal chamber diameter of 25¾ inches throughout) and the shipping weight is 700 pounds. The respirator is mounted on casters so that it can be moved conveniently.


Fabrikator Respirator

There are five regulation arm pits, one bed pan, four observation windows in the chamber and internal lighting. Easily closed covers seal the openings when not in use. Other features are the "spiralock" collar adjustment apparatus, a rubber covered mattress, a cot elevating handwheel and an adjustable head rest. For tilting in cases in which postural drainage is desired there is a hydraulic jack at one end.

A ¼ horse power motor drives a gear reduction unit controlling the opening and closing of the multicorrugated U. S. rubber bellows. The bellows can be operated by hand. A control panel is mounted on the side of the respirator and bears switches for the motor and light, and handles for negative and positive pressure. A gage indicates the internal pressure in centimeters of water.

This apparatus was investigated in a clinic acceptable to the Council. It was found to be a substantial piece of equipment. The report is summarized as follows:

1. It can be used for 2 child patients at the same time, or by 1 adult by the simple expedient of closing off the end which is not being used by the patient.
2. The head rest sling is adjustable.
3. The spiralock collar simplifies placing the patient's head through the rubber seal-off because the opening in the collar is adjustable.
4. A hydraulic jack makes the tilting of the respirator, such as would be needed for bulbar cases, a simple procedure.
5. Mechanisms are included which make possible rotation of the patient from side to side without opening the respirator.
6. The head end of the cot can be raised readily by means of a hand wheel.

The Council warned that the spiralock collar itself, while very efficient, is of stiff rubber, and a careless nurse might easily strangle a patient when she closes the collar opening.

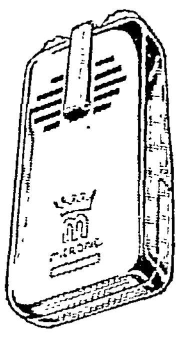
The Council on Physical Medicine voted to include the Fabrikator Respirator in its list of accepted devices.

SILVER MICRONIC HEARING AID MODEL 101 ACCEPTABLE

Manufacturer: Micronic Corporation, 101 Tremont Street, Boston 8.

This instrument is self contained, the battery compartment being accessible from the back of the case. The wearing clip is on the back of the aluminum case. The receiver cord plugs into the unit inside the battery case, with the cord leaving the case through a rubber grommet.

The volume control and the on-off tone switch are placed at the top of the instrument. One crystal receiver was supplied with the instrument.



Silver Micronic Hearing Aid Model 101

Dimensions and Weight

Dimensions: 10.5 by 5.7 by 2.6 cm.

Weight: 170 Gm.

Battery Data

	Measured	
	Voltage	Current
A:	1.3 volts	46 milliamperes
B: No sound	22 volts	0.5 milliampere
Squealing	22 volts	0.35 milliampere

Acoustical Gain

Measurements were made of the acoustical gain in decibels (sound pressure level produced in a 2 cm. coupler in decibels above sound pressure at the face of the microphone set in a 16 by 8 inch baffle). The input level was held constant at each frequency corresponding to 0.02 dynes per square centimeter or equivalent to a level of 40 decibels above 0.0002 dynes per square centimeter.

Typical results, with the volume control full on, were tabulated as follows:

Frequency	256	512	1,024	1,200	2,250	3,100	4,096 cycles per second
Tone control:							
1 dot	34	40	49	56	36	36	49 decibels
2 dots	14	25	39	45	24	25	35 decibels

Approximate values of maximum pressure levels at four frequencies produced in a 2 cm. coupler with the volume control set for full gain and at 1 dot tone setting are as follows:

Frequency	Input Level	Maximum Output Level
600 cycles	60 db.	100 db.
1,024 cycles	65 db.	105 db.
1,200 cycles	65 db.	111 db.
2,048 cycles	65 db.	93 db.

Intelligibility tests were made with a hard of hearing subject. The articulation and whispering tests were satisfactory, giving 90 per cent scores.

The Council on Physical Medicine voted to accept the Silver Micronic Hearing Aid, Model 101, for inclusion in its list of accepted devices.

THE JOURNAL OF THE
AMERICAN MEDICAL ASSOCIATION

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SATURDAY, SEPTEMBER 20, 1947

THE PHYSICIAN AND THE SCHOOL

Each year thousands of physicians serve our schools in varying capacities. In many communities they serve only as part-time medical inspectors who give medical examination to children entering school in the fall without medical examination by the family physician. In other communities the physicians are specially trained in school health service and are employed as full-time school medical advisers to work with pupils, teachers and administrators in carrying out a planned program of educational and preventive medical services and health guidance throughout the year. In other less fortunate communities little if any physician's service is provided in the school; only in epidemics of measles, scarlet fever, food-poisoning or ringworm of the scalp is the local health officer called for help and advice.

Certain questions continually recur: is the time of the physician in the school most profitably spent in routine medical inspections; should physicians continue to cooperate in school medical inspection plans that fall far short of meeting minimal medical standards; is the Astoria plan of school medical advising in every way superior to the older plan of medical inspecting; should all physicians who serve schools have some preservice instruction in school organization and administration; what methods have been found effective for procuring the correction of physical defects found on medical examination; how can the physical education program be adapted to the varying health needs of the individual children, and how can the health teaching program and the health service program best be coordinated?

A Conference on the Cooperation of the Physician in the School Health and Physical Education Program is being held October 16 to 18 under the auspices of the American Medical Association. (See Medical News of this issue for details.) Since the National Conference for Cooperation in Health Education published its *Suggested School Health Policies* (October 1945) great strides have been made in clarifying our thinking with regard to school health services. The coming Conference should further facilitate the process as the result of the pooled efforts of physicians and public health workers, teachers, administrators and health educators.

THE BIOLOGIC SIGNIFICANCE OF HYALURONIDASE

Widespread interest in the enzyme hyaluronidase followed the report[1] in 1939 that the action of this enzyme parallels closely the action of "spreading factor." This factor has been known since 1928 as a substance which, when injected together with a suspension of bacteria or of india ink, promotes invasion into the tissues. This action is accomplished by the hydrolysis of hyaluronic acid, a viscous mucopolysaccharide which seems to bind water in the interstitial tissues and to act ordinarily as a physical barrier to invasion by foreign substances. A comprehensive review of the biologic significance of hyaluronic acid and hyaluronidase has recently been published.[2]

Hyaluronic acid has been isolated from the aqueous and vitreous humor, the umbilical cord, synovial fluid, a number of tumors and hemolytic streptococci. It probably occurs in small concentration in connective tissue but has not been isolated from this source. The precise chemical structure is unknown. On hydrolysis equimolar quantities of hexosamine, acetyl and uronic acid have been found. On injection into animals, hyaluronic acid exhibits no antigenicity. The enzyme hyaluronidase has been found to be present in many bacteria, in bee venom, in the venom of many poisonous snakes, in extracts of testes and in other biologic material. Normal human serums contain an inhibitory factor which partially inactivates it. The situation is made more complex by the reported existence of other factors which inhibit the inhibiting factors.[3] Antiserums may be prepared to various preparations of hyaluronidase, but these are strictly specific for the source of the enzyme. However, no antiserums have yet been prepared for highly purified testicular hyaluronidase. The role of testicular hyaluronidase probably is confined to the dispersion of cumulus cells in the process of fertilization. Some apparently normal semen has been found to be deficient in hyaluronidase, and the application of hyaluronidase to the cervix is said to have increased considerably the number of successful fertilizations. A relation between hyaluronidase and rheumatic diseases is suggested by the inhibiting action of small amounts of sodium salicylate on the spreading of india ink or dye injected together with hyaluronidase.

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[1] Chain, E., and Duthie, E. S.: Nature **144:** 977 (Dec. 9) 1939.
[2] Meyer, Karl: Physiol. Rev. **27:** 335, 1947.
[3] Haas, Erwin: J. Biol. Chem. **163:** 63 (April) 1946.

A number of studies have been made on the relationship between virulence of bacteria and hyaluronidase formation, but in general there seems to be no convincing correlation. Repeated injections of testicular hyaluronidase have protected mice against lethal doses of streptococci, an action attributed to the hydrolysis of the hyaluronate capsule of the infecting organism. Since the spread of infection from one part of the organism to another involves physical transfer, continued study of the factors which limit and control the rate of this movement seems promising.

CONTROL OF RABIES

The Committee on Public Health Relations of the New York Academy of Medicine presents in a recent issue of Public Health Reports[1] a comprehensive analysis of the problem of rabies control. The analysis is based on information gathered from the replies to questionnaires distributed to state health departments, the provincial health authorities of Canada, the Bureau of Animal Industry of the United States Department of Agriculture, the United States Public Health Service, the Veterinary Division of the Office of the Surgeon General of the United States Army, the United States Livestock Sanitary Association, the American Veterinary Medical Association, the National Research Council and the various research projects sponsored by the Rockefeller Foundation. Statistics collected by the Bureau of Animal Industry since 1938 show that the incidence of rabies in men and animals increased in 1943, after a downward trend from 1939 to 1942, and reached a peak in 1944. The 1944 report of the Committee on Rabies of the United States Livestock Sanitary Association emphasizes the seriousness of the situation.

An intensive investigation of rabies was carried on from November 1936 to December 1945 by the International Health Division of the Rockefeller Foundation in cooperation with the Alabama State Board of Health. During the nine year investigation, field and laboratory studies of the disease and of the existing methods of control were under the direction of Dr. Harald N. Johnson. The Alabama studies showed that a single injection of 5 cc. of a potent vaccine will produce a high degree of immunity that is satisfactory for one year. The Rabies Research Laboratory at Montgomery has now been taken over by the United States Public Health Service, which is continuing the studies inaugurated by Dr. Johnson on the efficacy of new canine rabies vaccines. Until recently the protection afforded by vaccination in rabies was uncertain. Prophylactic vaccination of animals is now a practical possibility. With the development of the Habel test for potency, based on earlier work by Webster, and with new methods of producing better vaccines a high level of effectiveness can be attained.

Webster and Dawson in 1935 developed a mouse inoculation test for diagnosis which is more sensitive than any biologic test previously used and more accurate than microscopic examination. Studies of the virus, its distribution in the tissue of victims of rabies and its characteristics under varying conditions have revealed information that has contributed materially to the production of more effective vaccines and to more accurate knowledge of manifestations of the disease. Levinson and his associates at the Michael Reese Research Foundation, Chicago, produced in 1944 a potent inactivated virus vaccine with ultraviolet radiation from a new type of lamp which is a source of both total and extreme ultraviolet. Habel suggested recently that the use of serum or serum in combination with vaccine may bring about effective prophylaxis against rabies in men. Injection of serum might be given immediately to a person bitten by an animal suspected of having rabies. Administration of vaccine might then be deferred until the mouse test for diagnosis could be completed, which can be done in six days. If the diagnosis is positive, there is still time for effective treatment; if it is negative, the person has been spared the rather arduous Pasteur treatment.

The committee recommends that efforts should be made to secure uniform national control measures against rabies; that rabies in any animal or human being should be made reportable in all state and local units of health jurisdiction, the figures to be published in Public Health Reports; that every state should require annual licensing of dogs, and in urban areas the granting of a dog license should be made contingent on vaccination. The National Research Council on Nov. 26, 1945 reported that a single injection of 5 cc. of an approved vaccine is effective for use in mass vaccination programs and that three injections of 5 cc. each, administered a week apart, provide greater immunity and should be advised when practical. The United States Public Health Service or the Bureau of Animal Industry, or both jointly, should be urged to formulate standard quarantine procedures covering the various situations that arise during an outbreak of rabies and to recommend these to the states and territories for adoption. An educational program should be launched by appropriate health authorities to explain the necessity for control measures and to emphasize the efficacy of the vaccines now approved by the Bureau of Animal Industry and the National Institute of Health.

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[1] Control of Rabies, Report by the Committee on Public Health Relations of the New York Academy of Medicine, Pub. Health Rep. 62: 1215 (Aug. 22) 1947.

Current Comment

MEAT IN THE DIET OF INFANTS

The incorporation of meat in the diet of infants was not common before the introduction of commercially prepared products. Meat juices were sometimes used, and beef was laboriously scraped by the mother. In the early thirties commercially prepared vegetable and meat mixtures of good quality were introduced. Recently products solely of meat have also been studied and accepted by the Council on Foods and Nutrition. Long term studies are needed, which would extend over two or three years so that the effects of meat in the infant diet could be measured objectively in terms of height, weight and other variables. Our present knowledge of the role of meat in the infant's diet is largely empirical. The work of Leverton and Clark[1] is one of the few *objective studies undertaken in this field. An extension* of the study of the role of meat in the infant's diet might well open a new chapter in infant feeding procedures.

THE LAG IN DISTRIBUTION OF MEDICAL KNOWLEDGE

One of the most serious problems in world medicine is the inevitable lag that occurs between the introduction of a well established procedure and its availability for the mass of physicians who must apply it in the care of the sick. Graduate medical education is one of the methods by which this lag is shortened. Much attention is being given now in the United States to technics for providing general practitioners with detailed information concerning new and well established technics. In a recent issue of *The Medical Journal of Australia,* Dr. Kempson Maddox presents some interesting observations concerning the lag as it affects the Australian physician: "I propose to restrict my remarks to consideration of some therapeutic practices which I observed during a six-months medical tour of North America in 1946. In many medical centres in that country some of these practices would no longer necessarily be called as 'recent,' so long is the lag which confronts Australian medical practitioners, who are in my opinion handicapped by an outmoded undergraduate training, by long distance from the great medical research institutions of the world, by a relative paucity of physicians in contact with our own academic or research institutions, by the lack of enterprise of local agents for overseas drughouses. The actual fact is that only a fraction of even the metropolitan section of our profession is 'library-minded,' and that for one-third of the last thirty years our medical couriers have been in uniform, so that it is not surprising that Australian medicine, while always sincere and usually satisfactory, has never (recently at least) really been up to date. To correct this it is obvious that we must have more and more exchange fellowships, post-graduate lecturers and guest physicians, must make more use of library facilities and visual aids, must establish more and more post-graduate facilities in the teaching hospitals, must send more lecturers to tour the country towns, must harass the representatives of the drug houses of the western world until we obtain better and more prompt supplies of modern therapeutic weapons. I advise every physician in Australia to subscribe to THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION and to resolve to visit the United States at least once during the course of his professional career." The American medical profession may take pride in this commendation, and the commendation emphasizes our responsibility. The conditions to which our Australian colleague refers apply equally and perhaps even more to medical practice in most of the Latin American countries. There undergraduate medical training is outmoded and economic conditions make difficult the receipt of important medical literature from the rest of the world.

FLUID BALANCE IN WAR EDEMA

As part of a comprehensive study of the state of undernutrition such as occurs in some European areas, Henschel, Michelson, Taylor and Keys[1] have reported changes in plasma volume and extracellular fluid in 32 normal young men subsisting on a European type of famine diet for a period of twenty-four weeks. These investigators found that as the body weight decreases on the low caloric diet the plasma volume, measured by a dye method, and the extracellular fluid, measured as thiocyanate space, remain essentially constant at their prefamine levels. It is only when compared on the basis of diminishing body weight that the plasma volume and extracellular fluid appear to increase, to the extent of about 40 per cent. All values returned to normal after about five months of refeeding. Clinical edema appeared in 28 of the subjects, but this was not until the extracellular fluid surpassed 8 to 10 per cent of the body weight in excess of that present in the normal person. Thus it appears that the edema of simple caloric starvation may be considered to be simply a reflection of a reduction in cellular mass without large change in the absolute amount of extracellular fluid.

Rh BLOOD TESTS IN DISPUTED PATERNITY CASES

In a disputed paternity case that arose in New York recently the wife, husband and child submitted to the usual blood grouping tests, with the result that the blood of all three was found compatible. Despite this finding, the husband insisted that he was not the father of the child and Rh blood grouping tests were made which ruled out the husband as the father. Justice Panken of the Domestic Relations Court was convinced by the testimony of the expert witness who performed the Rh tests and, although he could not find reference to any court case involving the efficacy of the procedure, he held that the husband was not the father of the child. In reaching his decision, Justice Panken referred to a JOURNAL editorial of June 17, 1944, which stated that "medicolegal application of the Rh blood types in cases of disputed parentage is justified, provided suitable potent reagents are available."

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[1] Leverton, Ruth M., and Clark, George: Meat in the Diet of Young Infants, J. A. M. A. **134**: 1215 (Aug. 9) 1947

[1] Henschel, A.; Michelson, O.; Taylor, H. L., and Keys, A.: Am. J. Physiol. **150**: 170 (July) 1947.

ORGANIZATION SECTION

Official Notes

MEETING OF THE BOARD OF TRUSTEES, CHICAGO, SEPT. 4-5, 1947

The meeting of the Board of Trustees in Chicago September 4 to 5 was fully attended, with the exception of Dr. Charles W. Roberts, who died July 28. The Board unanimously elected, as a successor to Dr. Roberts, Dr. Wingate M. Johnson, Winston-Salem, N. C., to serve until the next annual session of the House of Delegates. As is customary, the election was held in executive session.

The following resolutions on the death of Dr. Charles W. Roberts were adopted:

WHEREAS, Dr. Charles Wesley Roberts has been taken from our midst since our last meeting, and

WHEREAS, Dr. Roberts had given long devoted service to organized medicine, and

WHEREAS, He had served on the Council on Industrial Health, as a member of the House of Delegates and as chairman of the Committee on Scientific Exhibits, and

WHEREAS, At the time of his death he was serving in his second term as a member of the Board of Trustees and was a member of its Executive Committee, and

WHEREAS, His death will be deeply felt by the American Medical Association; therefore be it

Resolved, By the Board of Trustees of the American Medical Association at its meeting on Sept. 4, 1947 that it wishes to record its sense of personal loss and to extend its deep sympathy to his family; and be it further

Resolved, That this resolution be spread on the minutes of the meeting of the Board published in THE JOURNAL and a copy sent to his family.

Resignation of Dr. S. J. Seeger

The Board of Trustees accepted the resignation of Dr. Stanley J. Seeger from his position as chairman of the Council on Industrial Health.

Woman's Auxiliary

The Board provided for a joint meeting of the Board of Trustees with the Board of Directors of the Woman's Auxiliary of the American Medical Association at a meeting to be held in Chicago on November 6.

Chicago Session in 1948

The Board of Trustees appointed Dr. Warren W. Furey, president of the Chicago Medical Society, as chairman of the Local Committee on Arrangements for the Chicago Session in 1948. The session will begin June 21 and continue through June 25. The exhibits will be installed on Navy Pier. Some of the sections will meet on the Pier and others in large halls closely adjacent.

International Relations

The Board gave consideration to the present status of cooperation with the World Medical Association, which meets in Paris during September 1947.

The Board also received a report from the Editor on a visit to the Pan-American countries and present relations with the Federacion Medica Pan America.

Cooperation with the Dental Profession

The Board of Trustees received a report from Dr. George F. Lull, Secretary of the Association, on a recent visit to the annual session of the American Dental Association and arrangements for further liaison with dentistry. The proposal has been made for the establishment of liaison with the dental profession at the state and county levels.

Report on Aid to the Secretary of the Interior

As has been reported in THE JOURNAL, arrangements had been made for sending a group of physicians to aid in the medical problems of Alaska. Letters of commendation have already been received from physicians in Alaska on the excellent services rendered by this group. Dr. George Lull announced that arrangements have been made with the Southwestern Medical Foundation for assembling a group of physicians in Dallas, Texas, to aid in the care of Indians in the United States. Other groups are in process of formation for visits to Puerto Rico and the Virgin Islands.

Liaison with Other National Organizations

Reports were received on liaison with the American Public Health Association, the National Association for the Employment of the Handicapped, the United States Chamber of Commerce, the National Association of Small Businesses and other groups.

Dr. F. H. Arestad was selected to advise with a committee of the American Hospital Association, which is directing the national student nurses recruitment program.

Drs. J. R. Miller, Louis H. Bauer, Thomas McGoldrick and Dean F. Smiley and Mr. George Cooley have been appointed to a Joint Committee of the American Public Welfare Association, the American Public Health Association, the American Hospital Association and the American Medical Association to devise principles for improvement in the care of the chronically ill.

Drs. Rustin MacIntosh and Louis H. Bauer have been reelected to represent the American Medical Association on the American Council on Rheumatic Fever.

Resolutions from the House of Delegates

The Board acted on resolutions referred from the House of Delegates and appointed the following committees: one for liaison with the Veterans Administration on the medical care of veterans, one on the general practice of medicine and one on rebates, as well as a council on national emergency medical service.

The Board also considered resolutions on public relations and authorized negotiations toward the securing of public relations counsel. A resolution on the celebration of centennials by the various sections was approved, and arrangements were made to notify the sections of such centennials as they occur.

Cooperation with American College of Surgeons

The Board of Trustees appointed a committee to cooperate with a special committee appointed by the American College of Surgeons to confer on problems of mutual interest in the advancement of their respective activities.

The Council on Scientific Assembly

Announcement was made of the election of Dr. Henry R. Viets as chairman of the Council on Scientific Assembly. This Council met in Chicago at the same time as the Board of Trustees and developed a suitable program for the Supplemental Session to be held in Cleveland on Jan. 5-8, 1948.

Committee on Nursing Problems

The Board discussed problems related to nursing and confirmed the appointment of Dr. T. P. Murdock as chairman of the Committee on Nursing Problems.

Affiliation of Medical Students

Arrangements were made to develop the necessary procedure for the affiliation of medical students with the American Medical Association and for the reestablishment of a section for students in The Journal of the American Medical Association.

Centennial of Dr. William Osler

A suggestion was received for a special issue of The Journal in honor of the centennial of Dr. William Osler. The Board of Trustees recommended that an issue of the *Archives of Internal Medicine* be dedicated for this purpose. The editorial board of that publication has agreed to develop such an issue.

Archives of Dermatology and Syphilology

The Board of Trustees approved special issues of the *Archives of Dermatology and Syphilology* honoring in successive years Dr. Howard Fox, Dr. G. M. MacKee and Dr. U. J. Wile.

Increase in Dues and Subscriptions

In view of increasing costs of paper and labor and in view of increasing demands on the headquarters staff for services to members of the medical profession, the Board will recommend to the House of Delegates an increase in the annual Fellowship dues and subscription to The Journal from $8 to $10 beginning with 1948.

Motor Vehicle Accidents

The increasing rise in the number of motor vehicle accidents caused the Board of Trustees to take action leading toward the publication of an annual report in The Journal on motor vehicle accidents throughout the United States, to be developed if possible in cooperation with the National Safety Council.

Dr. Loren Avery was appointed to the Association's Committee to Study Motor Vehicle Accidents by the Board of Trustees, the Chairman of which is Dr. Herman A. Heise of Milwaukee.

Medal for General Practitioner

As announced in an editorial in The Journal for September 13, the Board of Trustees has established a General Practitioner's Medal for Exceptional Service. This medal is to be awarded each year at the Supplemental Session of the American Medical Association.

Broadcasting

A contract with the National Broadcasting Company for another series of twenty-six radio programs, under the title "Doctors Today," was approved.

Affairs of the Association

The Board of Trustees considered various criticisms of the activities of the Association and took appropriate action relative to investigation and reply.

New Legislation

Attention was given to new legislation affecting the medical profession. The Board of Trustees, after a conference with the members of the Council on Medical Service, appointed a committee, including members of the Executive Committee of the Board, the headquarters staff and representatives of the Council on Medical Service, to take prompt action relative to the points of view of the American Medical Association when new legislation is introduced.

Finances

The Board received its usual report on finances and investments and gave careful consideration to proposed budgets as related to the income of the Association.

Cooperative Medical Advertising Bureau

Attention was given by the Board of Trustees to the discontinuance of California and Rhode Island as members of the Cooperative Medical Advertising Bureau. The Editor of The Journal was authorized to prepare a special editorial dealing with the problems of advertising in state medical publications.

Surgical Procedures

The Editor of The Journal was authorized to publish each year a statement from leading hospitals in the United States as to the number and character of surgical operations performed that fall into certain groups and the general results of such operative procedures.

Miscellaneous

In its usual consideration the Board discussed problems of publication and printing as related to the various periodicals of the Association, the American Medical Directory and the Quarterly Cumulative Index Medicus; it considered the status of various problems of the Association and other matters of administration of the headquarters office.

Associate Editor

The Editor of The Journal announced the employment of Dr. Richard J. Plunkett as Associate Editor, to report for duty in the headquarters office Oct. 1, 1947.

Hospital Competition with Private Practice

The Board authorized the sending of the following resolution, which was adopted by the House of Delegates, to all hospitals on the approved list of the Council on Medical Education and Hospitals, to the superintendent and chief of staff of each hospital and to county medical societies:

Resolved, That the House of Delegates of the American Medical Association is in complete agreement with the recommendations of the West Virginia State Medical Association in its opposition to the encroachment by hospitals and other organizations on the private practice of medicine; and be it further

Resolved, That all fees for medical services be set by and collected by or for doctors of medicine rendering this service, and that all policies and practices involving medical services be approved by the medical board or medical staff before being put into effect; and be it further

Resolved, That the Council on Medical Education and Hospitals recommend strongly that all hospitals conform to these resolutions; and be it further

Resolved, that the House of Delegates of the American Medical Association go on record as strongly disapproving this practice of encroachment, and that notice of this action be sent to the American, Protestant and Catholic hospital associations and to Blue Cross organizations.

Additions to Official Bodies

Dr. W. E. Grove of Milwaukee and Dr. Derrick Vail of Chicago have been added to the Council on Physical Medicine.

Dr. Frances A. Hellenbrandt of Richmond, Va., has been elected to the Committee on American Health Resorts.

Dr. W. L. Benedict and Mr. John Bradley have been reelected to the Committee on Medical Motion Pictures.

Policy Regarding Membership on Councils

The Board decided that no physician who accepts a retainer from any industrial medical organization shall be a member of any of its councils or bureaus.

SURVEY HEALTH OF INDIAN TRIBES

Five physicians from the Southwestern Medical College, Dallas, Texas, left September 13 for Window Rock, Ariz., where they will survey health conditions on the Navajo Indian reservation for Secretary of Interior Krug. The survey will require at least two weeks and may include the Hopi and Zuni reservations as well as the Navajo reservation.

The team of six Dallas physicians is the second to be sent on a health survey by the Secretary of Interior's office. Last July 19 a team of five Chicago physicians (The Journal, July 26, 1947, page 1097) was sent to Alaska to make a similar survey among Eskimos, Indians and Aleuts. In December, 10 or 12 physicians will be sent to Puerto Rico and the Virgin Islands to do what they can in the span of a few weeks to improve health conditions. The American Medical Association has been assisting the Secretary of Interior's office in selecting the teams.

The Dallas team is composed of Drs. Ozro T. Woods, chairman; Arthur Grollman, internist and nutritionist; Martin Buehler, internist; Francis Reichsman, tuberculosis specialist; Salmon Halpern, pediatrician, and John Henry Fish, ophthalmologist.

CONFERENCE ON COOPERATION OF PHYSICIAN IN SCHOOL HEALTH AND PHYSICAL EDUCATION PROGRAM

Invited representatives of the various State Departments of Health, State Departments of Education, State Medical Associations and State Education Associations will meet October 16 to 18 at the Hotel Moraine, Highland Park, to discuss means of putting into successful operation the policies regarding school health services enunciated by the National Conference for Cooperation in Health Education in October 1945. A group of nationally known specialists in school health problems will serve as discussion leaders and consultants. The Conference is being sponsored by the American Medical Association.

Council on Medical Service

GROUP HEALTH INSURANCE COVERAGES

(From a paper presented by H. L. Rietz, Metropolitan Life Insurance Company, before the Rhode Island Medical Society

In considering plans providing for the prepayment of any portion of the cost of illness, it is essential to have an understanding and appreciation of the facilities now available for such purposes. The field is not a new one. Much has been accomplished and continuing progress is being made in providing various forms of health insurance on a voluntary basis. The record of the past twenty-five years demonstrates the effectiveness and the adaptability of voluntary insurance in providing funds for the loss of earnings and expenses due to illness. The further development and amplification of such insurance plans are dependent on mutual understanding and cooperation between insurance companies and the medical profession.

Weekly cash indemnity benefits designed to compensate the employee for loss of income resulting from sickness or nonoccupational accident have been issued under Group Insurance policies since the early 1920's. With the development of basic data from their experience under such benefits and a gradually increasing demand for broader benefits, the insurance companies have been issuing Group Hospital Expense Insurance since about 1935, Group Surgical Operation Insurance since about 1938, and are now offering Group Medical Expense Insurance.

The Group Hospital Expense Insurance provides a daily benefit of fixed amount for each day of hospitalization up to a prearranged maximum, which is usually either thirty-one or seventy days. Reimbursement is usually also provided for Special Services rendered in the hospital, such as Laboratory Services, Operating Room Expense and Anesthesia—but not doctors' fees—to a total of five or ten times the daily benefit.

Group Surgical Operation Insurance is designed to reimburse for actual fees charged for designated operations subject to specified maximum amounts set forth in a schedule in the policy. These amounts are graded by type of operation, with an overall maximum of fixed amount, usually $150, although schedules with both larger or smaller maximums are issued.

Later in 1939 and 1940 respectively these two groups were extended to cover dependents of employees.

Although the older Group Accident and Health Weekly Indemnity Benefit has attained the broadest acceptance to date, and is still growing rapidly, the Hospital Expense and Surgical Operation Benefits have met with very substantial acceptance in a relatively short period since their introduction. Since the end of 1946 there have been in the United States about 5,800,000 employees and 4,750,000 dependents insured under Group Hospital Expense policies issued by the Life and Casualty companies. Similarly, about 5,400,000 employees and 2,500,000 dependents were insured by such companies under Group Surgical Operation policies.

That such coverages are growing at a substantial rate is indicated by the fact that the number of persons in the United States covered by Hospital Expense and Surgical Benefits in insurance companies increased by approximately 2,750,000 and 2,400,000 respectively in 1946.

When it is considered that these levels of coverage have been attained through voluntary means, within a period of twelve years or less, during which administrative procedures and sales technics also were developed and perfected, the adaptability of insurance companies' services in providing such benefits is apparent. Moreover, three points should be emphasized:

1. This development has been entirely through voluntary means.

2. It has been done without attempting to dictate to or interfere in any way with the medical profession or the traditional relationship between physician and patient.

3. New forms of coverage are constantly under study or experimentation by individual companies.

As an illustration of this third point, within recent months some companies have been experimenting on a more or less limited basis with Physicians' Attendance or Medical Expense Benefit Insurance. In some cases the benefit granted is a fixed amount per day for physician's attendance while the employee is hospitalized, subject to a specified maximum. In other cases benefits may be provided for both office and home calls for medical attention.

The trend toward the various forms of insurance coverage described is pronounced. With cooperation between the insurance companies and the organized medical profession, their continued development can be greatly facilitated on a basis satisfactory to the community, the physician and the insurance industry and operate to the best interests of all concerned.

For the five year period 1942 to 1946 this company (Metropolitan Life) returned on its Group Disability coverages 82 cents of every premium dollar in claims and dividends. Of the remaining 18 cents slightly less than 11 cents were used for expenses and the remainder, of about 7 cents, was required for taxes and contingency reserves.

While the figures cited relate to the experience under group coverages written by Life and Casualty companies, other forms of benefit plans have been developed and have enjoyed a substantial growth during recent years. For persons who are self-employed or employed in groups too small to qualify for regular forms of Group Insurance, there are available a wide variety of individual Accident and Health policies. In addition, hundreds of thousands of persons are eligible for benefits in event of sickness through membership in mutual benefit associations, fraternal societies and trade union plans. In addition to this, there is the Blue Cross Plan, which after approximately fifteen years of operation provides hospital benefits on a service basis to over 26,000,000 people in this country.

Insurance companies have developed the technics for the sound marketing, underwriting and administration of the forms of insurance described. They are aggressively developing such business on a voluntary basis, but they have no desire whatever to dictate to the medical profession or interfere with their rights and privileges.

However, it is apparent that the medical profession can make a positive contribution to the continuation and further development of voluntary insurance plans free from any suggestion of outside compulsion. To this end, it is highly desirable that:

1. The medical profession should adopt a schedule setting forth the relative values of the various surgical procedures.

2. Based on such relative values, the medical profession should adopt a schedule of dollar fees for the various surgical procedures which the majority of its members would accept in full payment for persons whose incomes are below a specified maximum.

3. The medical profession should urge its members to participate in such plans and to accept the schedule fees in full payment within the income limit.

Washington Letter

(From a Special Correspondent)

Sept. 18, 1947.

Veterans of Foreign Wars Charge Abuses in Veterans Medical Service

Veterans Administrator Omar Bradley has been asked by a resolution of the Veterans of Foreign Wars to consider recommendations for "the correction of abuses presently existing within the (Veterans) Medical Service." A resolution which was cleared through the VFW Rehabilitation Committee charged: (1) that the Veterans Administration Medical Service has undertaken to train physicians at cost of "vast sums of money" and that few physicians so trained will remain with the agency; (2) that some phases of training "appear to be foreign to accepted and legal principles of medical treatment"; (3) that requested inquiries into training and hospital conditions "have been smothered, ignored or conducted by inexperienced or incompetent investigators"; (4) that "vast sums have been spent in 'public relations' to publicize the medical service," and (5) that there is "woeful lack of cooperation between the medical service and other operational services within the Veterans Administration."

Atomic Energy Commission to Safeguard Health and Safety Conditions in Plants

The United States Atomic Energy Commission has appointed an advisory board, headed by Sidney J. Williams of Evanston, Ill., assistant to the president of the National Safety Council, to study public health, industrial and fire protection conditions in various atomic installations. The ten man board will tour the plants by chartered plan. They include radiologic specialists and health and safety authorities. Starting at the Oak Ridge, Tenn., plant the group is to visit atomic plants at Chicago; Berkeley, Calif.; Hanford, N. Y., and Boston. Among the board members are Dr. Philip Drinker, Harvard School of Public Health; Richard Fondiller, New York actuarial consultant; Dr. Hymer Friedell, Western Reserve University radiology professor; Dr. Herbert M. Parker, Richland, Wash., radiation protection adviser, and Dr. Abel Wolman, Johns Hopkins University sanitary engineering expert.

Navy Dental Corps Separated from Medical Department

Navy Department announced that its Dental Corps has been removed from supervision of the Medical Corps and will operate as a separate entity on all ships and stations. New regulations implementing the change set up a new Dental Department aboard ships and at shore installations and provide that a Dental Corps officer shall be the head of the Dental Departments of each. Dental Corps officers will command naval dental schools, dental technician schools, base and post dental detachments and separate dental clinics.

Bureau of Standards Reports Diamonds are Best Gage of Radioactivity

The National Bureau of Standards announced after extensive laboratory tests that diamonds are a better measure of radioactivity than man-made counting equipment. Single-crystal colorless diamonds can be used to count gamma rays given off by radioactive materials in the same way as the Geiger-Muller counter. Diamonds are a thousand or more times more sensitive to radiation, size to size, than the ordinary counter. They are virtually indestructible, while the measuring equipment lasts only a few months. Gamma radiation is used by physicians to arrest malignant growths and is also employed in industry and nuclear research.

U. S. Taking Heavy Loss on Sale of Radioisotopes to Other Nations

Dr. Paul C. Aebersold of Oak Ridge, Tenn., disclosed that the country is taking a heavy loss on the sale of radioisotopes to other nations. The United States Atomic Energy Commission is offering the radioactive materials at prices ranging from $1.10 to $52 per unit, while some of the material is estimated to have cost at least a million dollars per unit when produced by cyclotron. The commission announced that the first shipment of radioisotopes to go abroad was a small quantity of radioactive phosphorus (P^{32}) sent to Australia for treatment of a rare blood disorder. The shipment inaugurated the American policy of sharing peacetime atomic benefits with other nations.

St. Elizabeth's Hospital to Open Outpatient Department

Dr. Winfred Overholser, superintendent, St. Elizabeth's Hospital, announced that beginning this fall an outpatient clinic will be opened to serve patients with minor or emotional ills. Dr. Overholser regards the plan as "one of the most important in the hospital's history."

Coming Medical Meetings

Conference of State Medical Society Secretaries and Editors, Chicago, A.M.A. Headquarters, Nov. 7-8. Dr. George F. Lull, 535 N. Dearborn St., Chicago 10, Secretary.

American Academy of Neurological Surgery, Colorado Springs, Broadmoor Hotel, Oct. 9-11. Dr. T. C. Erickson, 1300 University Ave., Madison 5, Wis., Secretary.

American Academy of Ophthalmology and Otolaryngology, Chicago, Palmer House, Oct. 12-17. Dr. W. L. Benedict, 102 Second Ave. S.W., Rochester, Minn., Secretary.

American Anti-Arthritis Association, Del Mar, Calif., Oct. 4-5. Dr. Robert T. Pottenger, 65 N. Madison Ave., Pasadena, Calif., Secretary.

American Clinical and Climatological Association, Colorado Springs, Oct. 13-15. Dr. James Bordley III, Johns Hopkins Hospital, Baltimore 5, Secretary.

American Hospital Association, St. Louis, Sept. 22-25. Mr. George P Bugbee, 18 E. Division St., Chicago, Exec. Secretary.

American Public Health Association, Atlantic City, Oct. 6-10. Dr. Reginald M. Atwater, 1790 Broadway, New York 19, Executive Secretary.

American Society for the Study of Arteriosclerosis, Chicago, Hotel Knickerbocker, Nov. 2-3. Dr. O. J. Pollak, Wilmington General Hospital, Wilmington 14, Delaware, Secretary.

American Society of Clinical Pathologists, Chicago, Drake Hotel, Oct. 28-30. Dr. A. S. Giordano, 531 N. Main St., South Bend, Ind., Secretary.

Association of American Medical Colleges, Sun Valley, Idaho, Oct. 27-29. Dr. Fred C. Zapffe, 5 S. Wabash Ave., Chicago, Secretary.

Association of Medical Illustrators, New Orleans, Sept. 29-Oct. 2. Miss Muriel McLatchie, Massachusetts General Hospital, Boston, Secretary.

Association of Military Surgeons of the United States, Boston, Nov. 13-15. Col. James M. Phalen, Army Medical Museum, Washington 25, D. C., Secretary.

Central Neuropsychiatric Association, Galveston, Texas, Oct. 17-18. Dr. William C. Menninger, 3617 W. Sixth Ave., Topeka, Kans., Secretary

Delaware, Medical Society of, Wilmington, Oct. 13-15. Dr. John F. Hynes, Memorial Hospital, Wilmington, Secretary.

District of Columbia, Medical Society of the, Washington, Hotel Statler, Oct. 6-8. Mr. Theodore Wiprud, 1718 M Street N.W., Washington 6, Secretary.

Indiana State Medical Association, French Lick, Oct. 28-30. Mr. Ray E. Smith, 23 E. Ohio St., Indianapolis 4, Executive Secretary.

International College of Surgeons, U. S. Chapter, Chicago, Palmer House, Sept. 29-Oct. 2. Dr. Louis J. Gariepy, 16401 Grand River Ave., Detroit 27, Secretary.

Inter-State Postgraduate Medical Association of North America, St. Louis, Public Auditorium, Oct. 14-17. Dr. Tom B. Throckmorton, 406 Sixth Ave., Des Moines, Iowa, Secretary.

Kansas City Southwest Clinical Society, Kansas City, Mo., Municipal Auditorium, Oct. 6-9. Mr. E. Leas Clower, 630 Shukert Bldg., Kansas City 6, Executive Secretary.

Kentucky State Medical Association, Louisville, Sept. 29-Oct 2 Dr P. E. Blackerby, 620 S. Third St., Louisville 2, Secretary.

Michigan State Medical Society, Grand Rapids, Pantlind Hotel, Sept. 23-26. Dr. L. Fernald Foster, 2020 Olds Tower, Lansing 8, Secretary.

Mississippi Valley Medical Society, Burlington, Iowa, Oct. 1-3. Dr. Harold Swanberg, 510 Maine St., Quincy, Ill., Secretary.

New England Postgraduate Assembly, Boston, Copley-Plaza Hotel, Oct. 29-31. Dr. Leroy E. Parkins, 8 Fenway, Boston 15, Chairman.

New York State Association of Public Health Laboratories, Albany, Nov. 7. Miss M. B. Kirkbride, New Scotland Ave., Albany 1, Secretary.

Oklahoma City Clinical Society, Oklahoma City, Biltmore Hotel, Oct. 27-30. Dr. Elmer R. Musick, 512 Medical Arts Bldg., Oklahoma City, Director of Clinics.

Omaha Mid-West Clinical Society, Omaha, Oct. 27-31. Dr. John M. Thomas, 1031 Medical Arts Bldg., Omaha 2, Secretary and Director of Clinics.

Southern Psychiatric Association, Birmingham, Ala., Oct. 13-14. Dr. Newdigate M. Owensby, 384 Peachtree St. N.E., Atlanta, Ga., Secretary.

Southwestern Medical Association, Phoenix, Ariz., Hotel Westward Ho, Nov. 6-8. Dr. Louis W. Breck, 116 Mills St., El Paso, Texas, Secretary.

Vermont State Medical Society, Burlington, Hotel Vermont, Oct. 1-3. Dr. Theodore H. Harwood, 128 Merchants Row, Rutland, Secretary.

Virginia, Medical Society of, Roanoke, Oct. 13-15. Miss Agnes V. Edwards, 1200 E. Clay St., Richmond 19, Secretary.

Washington State Medical Association, Seattle, Olympic Hotel, Sept. 28-Oct. 1. Dr. Harold E. Nichols, 327 Cobb Building, Seattle, Secretary.

Wisconsin, State Medical Society of, Milwaukee, Hotel Schroeder, Oct. 6-8. Mr. Charles H. Crownhart, 110 E. Main St., Madison 3, Secretary.

Volume 135
Number 3

GOVERNMENT SERVICES

ARMY

TO THE MEDICAL PROFESSION AND TO FORMER MEDICAL OFFICERS OF THE ARMY

R. W. Bliss, Major General, the Surgeon General

I am using this means of communication to acquaint you with the changes which have been made in the Medical Department of the United States Army since the war and to invite you to continue your interest in the department.

The Armed Services must be supplied in peacetime as well as in wartime with superior medical service. To accomplish this we must have a reasonable number of medical officers in our Regular Army Medical Corps. Our immediate goal is three thousand regular medical officers to furnish care for approximately one and one-half million persons. We are presently far short of this goal. The doctors who must be obtained to make up our present deficit must be imbued with the highest professional standards. Poor personnel will solve no difficulties and will actually make any long term solution hopeless. We cannot secure these qualified doctors for the Army without your utmost cooperation. To have your cooperation our professional standards and their application must command your complete respect.

We in Army medicine are proud of our Corps. We are proud of the contributions we have made to American medicine in the past, and we intend to act in such manner as shall make us proud of its future accomplishments. The opportunities for the practice of superior medicine are great in the Army. These opportunities will be increasingly greater as the coordination of all medical activities of all the government medical services takes clearer form. This progressive coordination is inevitable. By the closest cooperation with many of the leaders in civilian American medicine, we have attempted and, I believe, are accomplishing the rehabilitation of Army medicine on a broad and solid base.

I outline some of the things which have taken place in the Army medical service since the end of the war:

We have an extensive training program in operation. Ninety-nine members of the Medical Corps are now diplomates of the various American Specialty Boards. Twenty-five others have completed the first half of their board requirements and an additional nine have been accepted for examination. We have established approved residency training in many of our Army hospitals. One hundred and ninety-eight officers are currently in this residency training. Five hundred and sixty officers have had or are having courses of varying lengths (many leading to advanced degrees) in civilian medical schools and hospitals. This September, forty-three of our able and younger medical officers will become residents or fellows in that number of outstanding medical schools. These appointments are for a two year period. During this time they will also conduct the Reserve Officers Training Corps (ROTC) medical program at these colleges. This training pace will be maintained. Nine of our general hospitals in this country have been approved as training institutions by the American Medical Association and seven hundred and thirteen leaders in civilian medicine are an integral part of the staff in consultant and teaching capacities.

In addition to the superior clinical work being done we are now spending over $4,000,000 a year on medical and surgical research. Over half of these projects are being carried out in civilian institutions. Many of these plans can be set up in Army institutions when capable doctors interested in research are available.

At the onset of World War II there was in the Medical Department one Administrative Corps officer for each seventeen doctors. A permananent Medical Service Corps has now been established, and there is now authorized a nonprofessional officer for each three officers of the Medical Corps.

Under the new Promotion Act which recently passed Congress, four years of constructive service credit is given to medical officers on entrance in the Service and this seniority is retained throughout the years. The rank of colonel is now attainable eight years earlier than was previously possible.

Effective Sept. 1, 1947 all Regular Army medical officers will be paid an additional $100 per month over all other pay and allowances.

Under this same act we now have authority to commission older and more experienced doctors in all grades up to and including that of colonel.

We have inaugurated a system of career planning. After the first few years of intern and residency training, an officer may select definite medicomilitary specialties. These are preventive medicine, clinical medicine and, as a very broad term, administrative careers, and the officer will remain in these specialties throughout his entire service.

I know you are interested in the Regular Army Medical Corps. The Army needs your continued interest in the procurement of able, ambitious young doctors for the Regular Army. In spite of our shortage, we cannot and will not lower our standards. I hope that you will advise some of your best interns and residents to consider seriously an Army career. We are prepared to train two hundred interns during the year beginning July 1, 1948. I hope that these two hundred interns will be outstanding men from your schools. I am confident that many of the ablest of these will request integration into the Regular Army at the end of their internships.

PUBLIC HEALTH IN JAPAN

The War Department has announced that Japanese health officials established a National Institute of Health May 21 to promote the health of the nation by controlling the production and assay of biologic products and to conduct research on diseases and other health problems.

Production of medical and dental supplies in Japan increased in April by 25 per cent, but the penicillin output went down 20 per cent when a fire destroyed the Kakeda Penicillin Factory.

The Japanese government took over the responsibility for the distribution of imported medical supplies and equipment from the Occupation Forces May 15.

From two to six lunches a week were being served to 5,486,619 Japanese school children on April 1. The food was supplied from former Japanese army and navy supplies, from relief food purchased from the United States imports and local resources and from donations throughout the licensed agencies for relief in Asia. The necessity for providing school lunches became evident in a survey which showed that the average height of primary school children had dropped 5 cm. from 1937 and 1946 and that the loss of weight in the same period was 3 Kg.

PERSONAL

Col. William D. Graham, M. C., has been assigned as chief of the hospital division in the Surgeon General's Office to succeed Col. Harry A. Bishop, M. C., who has been assigned to the office of the Secretary of War. Colonel Graham graduated from the University of Minnesota Medical School and entered the military service in 1934. He was awarded the Legion of Merit in the recent war for "exceptionally meritorious service" as commanding officer of the 158th General Hospital in England.

NAVY

LOCAL BOARDS FOR THE CONTROL OF RADIOISOTOPES

The Surgeon General of the Navy has directed the commanding officer of naval hospitals to form a local board for the control of radioisotopes which will be used clinically in all their institutions. This order follows a ruling by the Atomic Energy Commission that the human application of radioisotopes must be controlled by a local board in each hospital. The board will be composed of three specialists: (1) a medical officer well versed in the physiology and pathology of blood forming organs, (2) one whose specialty is metabolism and metabolic disorders and (3) a biophysicist, radiologist or radiation physiologist qualified in the technic of radioisotopes. Research in the Navy on the use of radioisotopes for the treatment of the sick is being directed by the newly formed Division of Atomic Defense of the Bureau of Medicine and Surgery.

SURGEON GENERAL INSPECTS NAVAL HOSPITALS

Surg. Gen. Clifford A. Swanson completed his tour of inspec[illegible] of naval hospitals, covering a period of several months, September 3 when he visited the naval hospital at Phila[illegible]. Again the plane trip from Washington was unique in [illegible] both the pilot and copilot were medical officers, Comdr. N. L. Barr and Capt. B. Groesbeck Jr., respectively. The surgeon general left by plane for Europe on September 8 to accompany a Congressional Committee. After the completion of his tour with the committee, he is expected to return to the United States about October 15.

NAVY AWARDS AND COMMENDATIONS

Captain Lloyd R. Newhouser

The President of the United States has awarded the Legion of Merit to Capt. Lloyd R. Newhouser (MC), U.S.N. The citation read in part as follows: For exceptionally meritorious conduct in the performance of outstanding services as head of the department of physiologic chemistry at the Naval Medical School, Bethesda, Md., from Dec. 7, 1941 to Sept. 2, 1945. Working in close collaboration with the American Red Cross, Captain Newhouser rendered services of inestimable value to the Navy by developing a program for obtaining blood and other supplies for liquid and dry plasma. In addition, he worked out a method for processing liquid plasma, designed the package for dry plasma and established the Naval Medical School as the plasma distribution center for naval hospitals within the continental limits of the United States. He further planned and put into operation the entire blood program in the Pacific war area. While acting as plasma fractionation officer, he developed the program for securing plasma fractions of a special type and designed the standard Army-Navy package for serum albumin, which proved its value under combat conditions. Again, as acting penicillin control officer for the Navy he carried out studies which led to the designing of the standard penicillin package now in general use. In all of these undertakings Captain Newhouser worked without the advantage of precedent. By his professional integrity and vision he contributed to the success of the Navy's medical program and upheld the highest traditions of the Naval Service. Dr. Newhouser graduated from Indiana University School of Medicine in 1924 and entered the naval service the same year; at present he is head of the graduate training program for the Bureau of Medicine and Surgery.

PUBLIC HEALTH SERVICE

GOVERNMENT AID FOR DEVELOPING CANCER COURSES

The National Cancer Institute is prepared to aid medical schools for further development of courses in cancer for medical students, the Surgeon General, U. S. Public Health Service, has announced. The institute received authority from Congress this year to make grants-in-aid to medical schools for this purpose. All the grants made by the National Cancer Institute in the past have been for the support of research on cancer. This new activity is being inaugurated on recommendation of the National Advisory Cancer Council, which in turn based its recommendations on the results of a conference held at the National Cancer Institute by a committee of medical educators.

The new program of aid to medical schools is designed to place greater emphasis on the integration of cancer instruction in the total undergraduate curriculum. The deans of all medical schools have been advised that the National Advisory Cancer Council is prepared to receive applications for financial assistance in expanding their cancer teaching programs.

Grants will range from $10,000 to $25,000 per year depending on the activities to be undertaken. Funds are available until spent. To assure continuity, the Surgeon General announced that funds have been set aside already for next year. It is anticipated that other agencies interested in promoting cancer control work will also give financial assistance to this program.

The committee of medical educators, whose report resulted in the new program, includes the following:

Frank E. Adair, Associate Professor of Clinical Surgery, Cornell University Medical College.
H. Glenn Bell, University of California Medical School.
Warren H. Cole, University of Illinois College of Medicine.
Harold S. Diehl, University of Minnesota.
Daniel C. Elkin, Emory University.
Roland W. Harrison, University of Chicago.
Joseph C. Hinsey, Cornell University.
Emile Holman, Stanford University.
George H. Humphries 2d, Columbia University.
A. C. Ivy, University of Illinois.
Maxwell E. Lapham, Tulane University.
Currier McEwen, New York University.
J. Roscoe Miller, Northwestern University.
John H. Mulholland, New York University.
Edward W. A. Ochsner, Tulane University.
Willard C. Rappleye, Columbia University.
Erwin R. Schmidt, University of Wisconsin.
George M. Smith, Yale University.
Francis S. Smyth, University of California.
William D. Stovall, University of Wisconsin.
Grantley W. Taylor, Harvard University.
Owen H. Wangensteen, University of Minnesota.
Milton C. Winternitz, Yale University.
Lewis H. Weed, National Research Council.

MISCELLANEOUS

SALE OF SURPLUS GOVERNMENT PROPERTY

The War Assets Administration, Denver Regional Office, 728 15th Street, is conducting a sale of surplus drugs, chemicals, hospital and surgical supplies and dental laboratory and hospital equipment including folding beds, food carts, bed frames, cabinets, operating room lamps, trays, tables, oxygen tents, bandages, stethoscopes and many other items. Persons who are veterans have certain priorities but must possess a Veteran's Certificate (WAA form 1127 or 63) showing the right to purchase the kind of property offered for sale. For detailed information concerning the Veteran's Certificate contact the Veterans Division, Room 707, Kittredge Building, Denver, or the War Assets Administration Office that is located at Mountain Road and Broadway, Albuquerque, N. M. Orders to receive proper consideration must be received in the Bid Opening Unit, 6th Floor, Commonwealth Building, 728 15th Street, Denver, by 3 p. m. September 29.

Medical News

(Physicians will confer a favor by sending for this department items of news of general interest: such as relate to society activities, new hospitals, education and public health. Programs should be received at least two weeks before the date of meeting.)

CALIFORNIA

Tumor Record Registry.—The Chronic Disease Service of the California Department of Health has inaugurated a tumor record registry on a voluntary pilot basis in selected California hospitals. The program will be carried out in consultation with the Cancer Commission of the California Medical Association. Purposes of the registry are (1) to determine the extent of cancer morbidity in the state, (2) to permit statistical epidemiologic studies, (3) to supply leads for clinical and laboratory research, (4) to facilitate follow-up of patients, (5) to evaluate therapy and the cancer control program and (6) to furnish information for professional and lay education.

Personal.—Dr. Roy O. Gilbert, Los Angeles, has been appointed health officer of Los Angeles County. He was formerly assistant health officer and director, Bureau of Preventive Diseases, Los Angeles County Health Department.——Dr. Samuel J. McClendon, San Diego, member of the State Board of Public Health and past president of the California Medical Association, was elected president of the California Heart Association at its meeting in Los Angeles.——Dr. Herbert Bauer has resigned as county physician at San Luis Obispo and has accepted a fellowship of one year of study in public health granted by the National Institute of Health, Washington, D. C. Dr. Bauer will study at the school of public health, University of California, Berkeley.

COLORADO

Denver's First Physician Coroner.—Dr. Angelo Lapi, now a research fellow in the Department of Legal Medicine at Harvard Medical School, Boston, has been appointed coroner of the city and county of Denver, the first time in the history of the city that a doctor of medicine will hold that position. Dr. Lapi, a graduate of University of Buffalo School of Medicine, 1937, will soon publish his studies on the subject of nutritional deficiencies.

State Laboratory Expands Services.—The central laboratory of the Colorado Department of Public Health in order to fill numerous requests will enlarge its services to physicians of the state. New services to be added include total protein in spinal fluids, new rapid culture for tubercle bacilli, typing of organisms of the enteric group, mycology and laboratory evaluation. All licensed physicians in the state may avail themselves of these services.

Appoint Director of General Hospital.—Dr. James P. Dixon, Philadelphia, has been appointed director of Denver General Hospital, Denver, and will assume his duties on October 1. He has been administrative intern under Dr. Lucius R. Wilson at the Episcopal Hospital in Philadelphia and is a former fellow in public administration and hospital administration at the W. K. Kellogg and Rockefeller foundations. He graduated from Harvard Medical School, Boston, in 1943.

Department Heads Appointed.—Dr. Joseph H. Holmes, New York, has been appointed associate professor of medicine and director of postgraduate training in the basic sciences at the University of Colorado School of Medicine, Denver. A graduate of Western Reserve University, Cleveland, Dr. Holmes also did postgraduate work at Columbia College of Physicians and Surgeons, New York, where he taught physiology prior to his appointment. Dr. John M. Foster Jr., Denver, has been promoted to professor of surgery and head of the department of surgery following the resignation of Dr. George B. Packard. Dr. Foster is also attending surgeon at Children's, Mercy, Presbyterian, St. Joseph's, St. Luke's and Colorado General hospitals. Dr. Packard, head of the department for the past eight years, will continue to teach as a professor of surgery while continuing private practice. Dr. Edward S. Taylor, New York, has been named professor and head of the department of obstetrics and gynecology following the retirement of Dr. Clarence B. Ingraham, made professor emeritus after thirty years as head of the department. Dr. Taylor, a graduate of State University of Iowa College of Medicine, Iowa City, 1936, was formerly a teaching resident in obstetrics and gynecology at the Long Island College of Medicine and Long Island College Hospital in Brooklyn.

CONNECTICUT

Semiannual County Meetings.—Dates for the semiannual meetings of the eight component county associations of the Connecticut State Medical Society have been announced as follows: Fairfield County, October 1; Hartford County, October 28; Litchfield County, October 7; Middlesex County, October 9; New Haven County, October 23; New London County, October 2; Tolland County, October 21, and Windham County, October 16.

GEORGIA

Reunion of Cancer Patients.—Fifty-one patients who have survived from five to ten years following treatment of cancers held a reunion at La Grange, August 29. The patients, who ranged in age from 16 to 81 years, had been treated at the cancer clinic of the City-County Hospital.

ILLINOIS

Two More Cancer Diagnostic Clinics.—Cancer diagnostic clinics have been established in Bloomington and in Elgin. The McLean County Cancer Clinic in Bloomington was opened June 20 under the direction of Dr. Howard P. Sloan. Clinic sessions are held the first and third Fridays of each month from 11 to 12 a. m. Dr. Joel L. Deuterman is director of the Elgin center opened July 11, whose clinic sessions are scheduled for every Friday morning at 8 o'clock. This brings to twelve the number of cancer diagnostic clinics now in operation throughout the state. The clinics provide consultant services to the physician in both the diagnosis and the treatment of cancer, thus bringing the advice of specialists within the reach of as many patients as the clinics can accommodate.

Chicago

Establish Postgraduate Division.—Establishment of a postgraduate division at the University of Illinois College of Medicine for administration of widely differing kinds of advanced teaching was announced September 5, under the directorship of Dean John B. Youmans. The new division is designed to improve the character and quality of postgraduate teaching and to facilitate its extension to physicians residing outside the Chicago area. It will correlate all postgraduate courses in medicine offered at the Chicago professional colleges. Although the university has offered advanced medical courses for many years and recently has expanded its postgraduate program for veteran physicians returning from service, instruction has been conducted by individual units and departments. At least eleven courses including instruction in ear-nose-throat, diseases of the eye, basic neuropsychiatry, basic medical sciences, dermatology, pediatrics and allergy will be offered in 1947-1948. Most of the classes will be conducted for nine months' duration, although several short courses ranging from two to twelve weeks will be offered.

Postgraduate Course for Veteran Training.—The Chicago Medical Society's postgraduate course in cardiovascular diseases October 20-25 in Thorne Hall has been approved for veterans' training. It is designed both for the physician especially interested in cardiovascular diseases and for the general practitioner. The out of state faculty includes:

Francis D. Murphy, Milwaukee, Arterial Hypertension: Diagnosis and Treatment of Its Complications.
Norman M. Keith, Rochester, Minn., Diagnosis and Course of Different Types of Hypertension.
Reginald H. Smithwick, Boston, Peripheral Arterial Disease.
Max M. Peet, Ann Arbor, Mich., Newest Work on Peripherovascular Disease and Suitable Treatment.
Karl P. Link, Ph.D., Madison, Wis., The Anticoagulant Dicumarol.
Ferdinand R. Schemm, Great Falls, Mont., Observations on Relative Importance of Sodium Water and Acids in the Treatment of Edema.
William D. Stroud, Philadelphia, Rheumatic Heart Disease.
Ovid O. Meyer, Madison, Wis., Treatment of Subacute Bacterial Endocarditis.
George C. Griffith, Los Angeles, Management of the Rheumatic State.
Robert L. Levy, New York, Management of the Patient with Anginal Pain.
Harold C. Lueth, Omaha, Management of Nephritis with Edema.
Cyrus C. Sturgis, Ann Arbor, Mich., The Heart in Thyroid Disease.
Julius Jensen, St. Louis, The Heart in Pregnancy.
Roscoe L. Sensenich, South Bend, Ind.
Cecil J. Watson, Minneapolis, Some Interphase Problems in Cardiac and Liver Disease.
Ralph A. Kinsella, St. Louis, Cardiac Lesions in Lupus.

The course, which is limited to 100 physicians, has a registration fee of $50. Veterans desiring to avail themselves of the benefits to which they are entitled must file a "Certificate of Eligibility and Entitlement" with the Veterans Administration, 366 West Adams Street, Chicago. The signed form should be presented to the Chicago Medical Society at registration. Veterans residing outside Illinois may secure the certificate at the nearest Veterans Administration office and mail it to the one in Chicago. A photostatic copy of the veteran's discharge certificate must accompany the application, and if he has ever applied for benefits he should note his assigned C number.

Public Conference on Nutrition.—A conference on nutrition will be held October 1 in the John B. Murphy Memorial Auditorium, beginning at 9:30 a. m.; it is sponsored by the Chicago Medical Society in cooperation with the Chicago Nutrition Association, the Institute of Medicine, the Illinois State Medical Society and Friends of the Land. Dr. Andrew C. Ivy, University of Illinois College of Medicine, will speak on "Appetite and Hunger"; George A. Sloan, LL.D., president of the Nutrition Foundation, New York, on "The Food Industry and the Public," and Dr. Frank G. Boudreau, National Research Council, New York, on "The World Food Situation: Yesterday and Tomorrow." Dr. Jonathan Forman, editor, *Ohio State Medical Journal*, Columbus, will open the afternoon session speaking on "The Soil and Nutrition." He will be followed by Dr. Clive McCay, Cornell University, Ithaca, N. Y., "Food for the Aged"; Harold H. Mitchell, University of Illinois, Ph.D., Urbana, "Diet and Climate," and Dr. Harold P. Rusch, University of Wisconsin Medical School, Madison, "Diet and Cancer of the Liver." At the evening session, which begins at 7:30, Dr. Vilhjalmur Stefansson, New York, an Arctic explorer, will speak on "An Anthropologic Approach to Nutritional Problems" and Dr. John P. O'Neil, Chicago, on "The Citizen's Responsibility."

KENTUCKY

Expand Cancer Clinic.—The construction of an addition to the cancer clinic at St. Joseph Infirmary, Louisville, is being financed by the Sisters of Charity of Nazareth. The Kentucky division of the American Cancer Society will furnish the necessary equipment for the operation of the clinic. It will have three x-ray therapy machines and be able to handle 1,200 patients a year.

MASSACHUSETTS

Conference on Myasthenia Gravis.—A conference on myasthenia gravis will be held at the Massachusetts General Hospital, Boston, October 2-4. Drs. George H. Atcheson and Otto Krayer, both of Boston, Edith Nachmansohn, New York, and others will lead the opening discussion on neuromuscular transmission Thursday afternoon at 2 p. m. On Friday the morning meeting will be given to diagnosis and treatment and the afternoon to the problem of the thymus, thymectomy and thyroid. A clinical meeting and a discussion of future research is planned for Saturday morning. An informal dinner Thursday evening will include guests. All investigators working on the problem of neuromuscular transmission and clinicians, surgeons and patients with myasthenia gravis are welcome.

MICHIGAN

The Biddle Lecture at the Annual Meeting.—The Honorable John N. Brown, assistant secretary of the Navy for air, Washington, D. C., will deliver the Biddle oration at the annual session of the Michigan State Medical Society September 24 in the Pantlind Hotel, Grand Rapids, on "Human Engineering." It is the only lecture of the session open to the public.

NEVADA

Mental Hygiene Society Reorganized.—The reorganization of the Nevada Mental Hygiene Society has been completed following the formulated plans for incorporation. Meetings will be held on the ninth of each month in the Chamber of Commerce Hall, Reno. A committee has been set up to look into the feasibility of providing a commission on the subject of divorce which if accepted will be presented to the International Meeting on Mental Hygiene in London, 1948. The society has fifty members at present and Dr. John R. Hills, Reno, is president.

NEW YORK

Eighth District Clinical Sesson.—The annual meeting and clinical teaching day of the Eighth District branch of the Medical Society of the State of New York at Jamestown, October 1, will feature a symposium on cancer. Specialists from Roswell Park Memorial Institute, Buffalo, will discuss "Results of Experimental and Clinical Investigations of the Newer Agents in the Treatment of Cancer," "Advances in the Use of X-Ray and Radium" and "Newer Surgical Methods in the Treatment of Cancer." Papers at the morning session will be on "Problems in X-Ray Diagnosis" and "Role of the Laboratory in Diagnosis and Treatment." The Woman's Auxiliary to the Chautauqua County Medical Society will entertain the wives of physicians attending the meeting.

New York City

The Christ Church Forum.—On the program of the Christ Church forum, October 1-2, Dr. Edward H. Ochsner, Chicago, will speak Wednesday afternoon on "What's Wrong with Socialized Medicine." Thursday afternoon Dr. Charles G. Heyd, New York, will address the session on "Medical Discovery and World Peace."

The Gregory Lecture.—Dr. Alan Gregg, director, Division of Medical Sciences, the Rockefeller Foundation, will deliver the 1947 Menas S. Gregory Lecture on "The Prospects and Promises of Psychiatry" at New York University College of Medicine. It will be held October 17 at 4 o'clock in the amphitheater, psychiatric division, Bellevue Hospital.

Industrial Health Publication.—The faculty of the New York University College of Medicine is publishing a monthly magazine, *Health on the Job*, circulated among executives of about twenty thousand New York business firms. It is dedicated to new developments in the industrial health field with particular emphasis on timely interviews with medical directors of large and small firms. Medical directors of some of the nation's largest corporations are its contributors. Dr. David H. Goldstein, medical director, New York Times, and assistant professor of preventive medicine, is supervising editor.

Conference on Antihistamine Agents in Allergy.—The New York Academy of Sciences will hold a conference on Antihistamine Agents in Allergy October 3-4. Among the speakers will be:

Dr. M. Rocha e Silva, Instituto Biologica, São Paulo, Brazil, Role of Blood Platelets and Leukocytes in Anaphylaxis.
Dr. E. T. Waters, University of Toronto, Toronto, Canada, The Detoxification of Histamine.
Dr. Daniel Bovet, University of Rome, Italy, Introduction to Antihistamine Agents and Antergan Derivatives.
Dr. Rolf Meier, University of Basle, Switzerland, Antistine and Related Imidazolines.

Persons desiring to attend the conference may do so by making a request in writing to Eunice T. Miner, Executive Secretary, New York Academy of Sciences, Central Park West at Seventy-Ninth Street, New York 24.

OHIO

Poliomyelitis in Akron.—A sharp outbreak of poliomyelitis has been reported in Akron, with an unofficial estimate of 205 cases as of September 7, a figure no doubt including cases with onsets during the latter part of August. The U. S. Public Health Service is cooperating with the state and local health authorities in combating the epidemic.

Conference of the Institutum Divi Thomae.—The annual conference of the Institutum Divi Thomae and its affiliated units was held in Cincinnati September 2-5 under the chairmanship of Elton S. Cook, Ph.D., Cincinnati, dean of research. Among the subjects discussed were cancer, clinical reports, enzymes, cellular extracts and research in physics. Physicians who appeared on the program included Drs. Joseph C. Amersbach, New York; Leo G. Nutini, Cincinnati, and Morris Fishbein, Chicago, Editor, THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

Symposium on Nutritional Anemia.—A symposium on nutritional anemia, sponsored by the Robert Gould Research Foundation, Erlanger, Ky., will be held in Cincinnati October 16-18 under auspices of the University of Cincinnati College of Medicine with Elmer V. McCollum, Ph.D., Baltimore, as chairman. The program includes:

Dr. Maxwell M. Wintrobe, Salt Lake City, The Physiological Implication of the Anemic State.
Max O. Schultze, Minneapolis, The Metabolism of Iron and Copper.
Dr. Carl V. Moore, St. Louis, Hypochromic Anemias and Iron Metabolism.
Dr. George M. Guest, Cincinnati, Hypoferric Anemia in Infancy.
Conrad A. Elvehjem, Ph.D., Madison, Wis., Physiology of Folic Acid.
Dr. William J. Darby, Nashville, Tenn., Treatment of Nutritional Anemia with Folic Acid.
Dr. William H. Sebrell, Bethesda, Md., B Complex and Anemia.
Dr. Wolfgang W. Zuelzer, Detroit, Megaloblastic Anemia in Infancy.
Dr. Richard W. Vilter, Columbus, Ohio, Vitamin C and Anemia.

OREGON

Dr. Thompson Returns to State Board of Health.—Dr. G. D. Carlyle Thompson, first director of the State Board of Health's maternal and child health program, has returned after four years to head the agency's division of preventive medical services. He resigned in 1943 to take a position with the U. S. Children's Bureau. Dr. Thompson is a graduate of the University of Michigan Medical School, Ann Arbor, Mich., 1928. From 1944 to 1946 he was in the Medical Corps, Army of the United States.

PENNSYLVANIA

New Editor for County Bulletin.—With the September issue of the *Dauphin Medical Academician*, Dr. Lloyd S. Persun Jr., Harrisburg, assumed the duties of editor replacing Dr. William Tyler Douglass, Harrisburg, who has been editor for the past four years. Dr. Persun is a graduate of Temple University School of Medicine, Philadelphia, 1940.

Philadelphia

Personal.—Dr. Valy Menkin, Temple University School of Medicine, attended the sixth International Congress for Cytology in Stockholm July 10, where he was chairman of the section on cell metabolism. He also addressed the fourth International Congress of Microbiology in Copenhagen

Scholarship Established.—Bryn Mawr College is to establish the Anna Howard Shaw scholarship to be awarded to a graduate wishing to study medicine The scholarship was established by income from a $160,000 bequest in the will of Dr. Linda B. Lange, Philadelphia, who died April 24.

Cancer Courses.—The University of Pennsylvania School of Medicine and its hospital, Philadelphia, will offer this fall postgraduate training in the diagnosis and treatment of cancer. The instruction, made possible by a $30,000 allocation from the state's cancer control funds, will consist of three courses of two weeks each on the theory, pathology, diagnosis and treatment of cancer. Courses will be open to all interested physicians.

TEXAS

Dr. Blocker Director of Postgraduate Training.—Dr. Truman G. Blocker Jr., associate professor of surgery since 1944, University of Texas Medical Branch, Galveston, has been appointed professor of plastic and maxillofacial surgery and director of the postgraduate training program at the university. A graduate of the University of Texas Medical Branch, Galveston, 1933, he was a resident surgeon and attending surgeon and plastic surgeon at the John Sealy Hospital, Galveston, and plastic surgeon for the State Hospital for Crippled Children, 1935-1936. From 1936 to 1942 he was an assistant professor of surgery. He served in the war as a lieutenant colonel in the medical corps of the Army of the United States.

WISCONSIN

Community Honors Dr. Jegi.—More than fifteen hundred fathers, mothers and children of the Galeville area gathered to honor Dr. Henry A. Jegi, their physician for half a century. Tribute to the doctor's faithful and efficient service was given by many of his fellow physicians and leaders of the community. Mr. Charles H. Crownhart, secretary of the state medical society, and Roy Regatz, assistant secretary, and over two hundred of the several thousand "babies" delivered by Dr. Jegi were present.

State Medical Meeting in Milwaukee.—The Medical Society of Wisconsin will hold its one hundred and sixth annual meeting October 6-8 at the Milwaukee Auditorium, Milwaukee, under the presidency of Dr. Charles A. Dawson, River Falls. Besides members of the society, those addressing the general scientific sessions are:

Harold G. Wolff, New York, Emotions and Gastric Function.
Anton J. Carlson, Chicago, Some Obstacles in the Path Toward an Optimum Diet.
H. Houston Merritt, New York, Therapy in Epilepsy.
Eugene A. Stead Jr., Durham, N. C., Syncope.
Philip Lewin, Chicago, Treatment in Early Stages of Polio.
Robert M. Zollinger, Columbus, Ohio, Management of the Acute Gallbladder.
W. L. Palmer, Chicago, Functional Disturbances of the Gastrointestinal Disorders.
Milton J. E. Senn, New York, Focal Points in Child Development.
Gordon B. Myers, Detroit, Clinical Use of the Antibiotics.
James H. Bloomfield, Chicago, Management of Late Hemorrhaging in Obstetrics.
Albert M. Snell, Rochester, Minn., Hepatic Diseases.
Donald W. Hastings, Minneapolis, Psychiatry and the General Physician.
Nathaniel G. Alcock, Iowa City, Neoplasm of the Adult Kidney.
Mr. Richard H. Schannen, Fort Wayne, Ind., The Doctor and the Law.

Tuesday morning there will be section meetings on internal medicine, obstetrics and gynecology, ophthalmology and otolaryngology, pediatrics, radiology and surgery. Roundtable luncheons and clinical demonstrations and luncheons will be held each day, and the Loyola University medical alumni in Wisconsin will hold a dinner meeting at the Hotel Schroeder Monday at 6 p. m. The annual dinner will be in the Crystal Ballroom Tuesday evening.

GENERAL

Hodgkins Disease Foundation Drive.—A campaign for $2,000,000 for research will be launched by the Hodgkins Disease Research Foundation October 15. The foundation was formed last March (The Journal, March 8, p. 708) to coordinate separate groups of scientists studying the disease and to focus attention on it.

International Medical Assembly. — The postgraduate school, which is sponsored by the Interstate Postgraduate Medical Association of North America, will be held October 14-17 in the public Auditorium, St. Louis, under the presidency of Dr. James E. Paullin, Atlanta, Ga. A varied scientific program of addresses, clinics and technical exhibits is planned. The registration fee is $5.

Drs. Wall and Grulee Receive Finlay Award.—At the banquet of the first Pan-American Congress of Pediatrics in New York, July 12, Drs. Joseph S. Wall, Washington, D. C., past president of the American Academy of Pediatrics, and Clifford G. Grulee, Evanston, Ill., executive secretary of the academy, were presented with the Carlos J. Finlay Award for their contributions to Cuban sanitation and public welfare.

The March of Dimes and Poliomyelitis.—The National Foundation for Infantile Paralysis reported September 8 that it spent nearly $9,000,000 in the year ended May 31, 1947, most of it fighting record poliomyelitis epidemics, particularly in Illinois, Florida, Alabama, Colorado, California and Minnesota. Basil O'Connor, president of the foundation, said that there were 25,191 polio cases reported, a total exceeded only by the 27,363 cases reported in 1916.

Appointed WHO Chief in Italy.—The World Health Organization Interim Committee has appointed Dr. James A. Farfor, Sanquhar, Dumfries County, Scotland, head of its mission in Italy, succeeding Dr. Gordon M. Frizelle, London, who resigned to become assistant dean of the London School of Hygiene and Tropical Medicine. Dr. Farfor received his M.D. degree from the University of Edinburgh. He has studied at the Charcot Clinic at the Salpêtrière Hospital in Paris.

Academy of Neurological Surgery Meets at Colorado Springs.—The annual meeting of the American Academy of Neurological Surgery will be held at the Broadmoor Hotel, Colorado Springs, Colo., October 9-11, under the presidency of Dr. William S. Keith, Toronto, Canada. Subjects under discussion include Review of Intervertebral Disks, Results of Neurosurgical and Combined Treatment, Brain Tumors in Childhood, and a Report of Five Cases of Psychoses Treated by Restricted Certical Ablation. A symposium on head injuries is scheduled for Friday at 9 a. m. and another on intracranial aneurysms for Saturday afternoon.

Awards for Science Writers.—The American Association for the Advancement of Science has announced the George Westinghouse Science Writing Awards of $1,000 each, one to the writer of the year's best science writing in newspapers and a corresponding one for general magazine science writing. The awards are administered by the association from a grant by the Westinghouse Educational Foundation. This year will mark the first award to science writers for general circulation magazines and the second for newspaper science writers. Entries must have been published in a newspaper between Oct. 16, 1946, and Oct. 15, 1947, or in a magazine between October 1946 and September 1947. Awards will be presented at the annual meeting of the association in Chicago, December 26-31. Deadline for submission of the material is October 6. Address The American Association for the Advancement of Science, 1515 Massachusetts Ave. N. W., Washington 5, D. C.

Fellowships for Study in Argentina.—The Institute of International Education has been asked by the Argentine National Cultural Commission to assist in the selection of two United States graduate students, who will receive fellowships from the commission for ten months' study in Argentina. Fellowships will run from March 1 to Dec. 31, 1948, and will provide round-trip travel plus 5,000 Argentine pesos (about $1,250 at current official exchange rates). The conditions established by the Cultural Commission specify that the recipients of the fellowships shall be graduate students and research workers of recognized standing in the arts, humanities, natural sciences or social sciences, whose work under the fellowship will be of positive benefit to the cultural development of the United States and Argentina. They must be native-born United States citizens over 25 and under 45 years of age and must have a working knowledge of Spanish. Each fellowship holder will be required to have a specific objective and to submit a report every two months as well as a general report at the end of the fellowship period. For details address the Institute of International Education, 2 West 45th Street, New York 27. Applications must be in the hands of the Institute before Oct. 31, 1947.

Disaster Relief Operations.—The most extensive American Red Cross disaster relief operations since 1937 were provided in the three months that ended in early July. Relief expenditures for that brief period were above $4,000,000, which was more than had been expended in either of the two preceding fiscal years. Medical and nursing resources were taxed when lists of injured reached thousands in Texas City, and hundreds at Woodward, Okla. Thousands more in four states required immunization against typhoid by health departments with Red Cross assistance, because of floods. In fifty-five Red Cross shelters opened throughout June to house and feed residents in the flooded areas, Red Cross nursing representatives and disaster nurse reserves supplemented local doctors and nurses in Illinois, Missouri, Iowa and Nebraska. About 48,000 persons were affected by the floods. Among the eleven disaster relief operations in June which required Red Cross aid were tornadoes in Ohio, Pennsylvania and Arkansas; a commercial airliner crash in Virginia; Kentucky flash floods, and floods in central Vermont and southern New York. Cooperating in meeting disaster nursing needs in Kentucky floods was the Frontier Nursing Service. In the first six months of 1947 thirty-three disasters affecting twenty-four states required the services of 425 nurses recruited by the American Red Cross.

Prevalence of Poliomyelitis.—Reports of cases of poliomyelitis for the periods indicated have been received from the division of public health methods, U. S. Public Health Service:

	Week Ended			Total to		Total *	
Division and State	Sept. 6, 1947	Sept. 7, 1946	Median, 1942-1946	Sept. 6, 1947	Sept. 7, 1946	March 16-Sept. 6, 1947	March 17-Sept. 7, 1946
New England:							
Maine	5	1	2	20	16	17	16
New Hampshire	0	7	1	14	90	10	89
Vermont	0	2	3	20	19	12	15
Massachusetts	34	16	23	145	97	138	93
Rhode Island	14	7	1	92	25	91	25
Connecticut	23	8	9	68	47	65	39
Middle Atlantic:							
New York	95	101	101	393	645	357	612
New Jersey	34	15	22	124	143	118	137
Pennsylvania	33	20	20	181	143	167	131
East North Central:							
Ohio	195	52	33	387	371	377	356
Indiana	28	47	23	112‡	181	96‡	176
Illinois	87	199	131	411	1,245	389	1,237
Michigan	45	55	34	230	455	206	447
Wisconsin	15	130	19	81	560	57	547
West North Central:							
Minnesota	29	199	17	134	2,019	121	2,018
Iowa	10	30	23	85	308	77	299
Missouri	5	120	21	63	661	53	654
North Dakota	0	66	7	60	301	55	301
South Dakota	2	45	1	9	286	7	286
Nebraska	11	40	11	130‡	304	123‡	303
Kansas	3	50	13	56	511	38	507
South Atlantic:							
Delaware	6	2	2	105	11	105	11
Maryland	6	9	5	47	58	41	56
District of Columbia	0	3	3	6	15	4	14
Virginia	12	4	9	73	72	63	66
West Virginia	9	5	5	44	47	40	44
North Carolina	11	8	8	82	73	67	66
South Carolina	3	0	3	13	18	12	15
Georgia	4	7	3	47	116	40	108
Florida	1	16	0	65	463	40	414
East South Central:							
Kentucky	15	3	6	37	76	36	73
Tennessee	12	16	13	59	119	47	110
Alabama	3	6	4	37	318	24	315
Mississippi	3	21	4	36	227	19	210
West South Central:							
Arkansas	7	34	5	55	258	44	246
Louisiana	1	16	5	43	261	25	242
Oklahoma	5	33	10	39	266	28	260
Texas	8	25	25	136	712	111	684
Mountain:							
Montana	1	5	5	18	77	16	61
Idaho	5	5	1	84	17	74	17
Wyoming	3	5	2	14	80	11	79
Colorado	5	72	23	38	651	33	650
New Mexico	5	15	3	20	103	17	102
Arizona	1	7	2	27	81	24	78
Utah	0	13	13	7	68	2	62
Nevada	0	0	0	0	3	0	3
Pacific:							
Washington	3	28	7	80	220	72	187
Oregon	8	12	11	49	86	44	82
California	21	146	30	582	1,237	433	1,150
Total	826	1,726	...	4,658‡	14,160†	4,046‡	13,693
Median, 1942-1946	...	....	906	7,047		6,650	

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* Last two columns show reported incidence since approximate seasonal low week (week ended between March 15 and 21).

† Figures changed by corrected reports.

‡ Delayed reports: Indiana 33 cases (nonparalytic), July 27 to August 30; Nebraska 2 cases, week ended July 19. Included in cumulative totals.

CANADA

Immunization Week.—Canada's fifth annual National Immunization Week, sponsored by the Health League of Canada in cooperation with local health departments, will be observed October 5-11. The purpose is to call attention to the fact that certain communicable diseases which are taking toll among the nation's children are largely preventable.

Gross Memorial Lecture.—The tenth annual Louis Gross Memorial Lecture will be delivered at the Jewish General Hospital, Montreal, under the auspices of the Montreal Clinical Society October 29 at 8:30 p. m., by Dr. I. Arthur Mirsky, director of the May Institute for Medical Research and associate professor of experimental medicine in psychiatry, University of Cincinnati College of Medicine, Cincinnati. His subject will be "Biology of Metabolic Disease in Man."

LATIN AMERICA

Art Exhibit in Buenos Aires.—An exhibit of fine arts for physicians will be held in Buenos Aires, Argentina, on November 24 of this year. Physicians of Argentina, Brazil, Chile and Uruguay will participate and cordially invite American physicians to participate. The exhibit will be made up of the following three sections: painting, sculpture and photography. Requirements and other information may be obtained from Asociacion Medica de Culture Artistica, Secretaria, Independencia 409-1°. A., Buenos Aires, Argentina, S. A. There will be a special prize for American, Brazilian, Chilean and Uruguayan participants, consisting of a gold medal and a diploma. The inscription for physicians is $5. The items should be sent as soon as possible so that they are received in the headquarters of the Asociacion before Oct. 31, 1947. Physician artists interested in exhibiting are invited to write at once to Mr. A. L. Rose, Mead Johnson & Company, Evansville, Ind., in regard to arrangements for shipping.

FOREIGN

Course on Digestive Pathology.—The thirty-first postgraduate course on Digestive Pathology will be given Oct. 6, 1947 to Dec. 15, 1947 at Escuela de Patologia Digestiva of Hospital de la Santa Cruz y San Pablo in Barcelona, Spain, under the direction of Dr. F. Gallart Monés. The courses will be limited to 30 students: a course of radiodiagnosis, limited to 10 students; a practical course of laboratory, limited to 12 students, and a special course of gastroscopy, limited to 5 students. The price of matriculation is 500 pesetas; matriculation and either radiodiagnosis or gastroscopy, 1,000 pesetas, and matriculation and practical course of laboratory, 700 pesetas.

CORRECTION

The Management of Syphilis.—In the special article in The Journal, Aug. 30, 1947, in the second line of the last paragraph on page 1539, the word "symptomatic" should have been "asymptomatic."

Marriages

Charles Henry Patterson, Lynchburg, Va., to Mrs. Marguerita Goodricke-Cattell Young of Auckland, New Zealand, June 18.

Robert Cunningham Douthat, Long Beach, Calif., to Miss Thelma Lucille Buckley at Las Vegas, Nev., June 6.

Herbert William Park III, Boston, to Miss Frances Bradshaw Little at Greensboro, N. C., July 3.

Louis Albert Packard, Whipple, Ariz., to Miss Grace Darling Winans at Flagstaff June 6.

Raymond S. Mullen Jr., Redlands, Calif., to Dr. Barbara Brady of San Francisco June 19.

Robert Principato, Camden, N. J., to Miss Letitia Anna Orlando of Haddonfield April 26.

Charles W. Young, Kinmundy, Ill., to Miss Linda Elizabeth Rehew in Evanston, Ill., April 12.

Howard Isaacson, Freehold, N. J., to Miss June Lucille Golove of Philadelphia June 22.

Irving Marshall, Trenton, N. J., to Dr. Ethel Geraldine Lawner of Brooklyn June 8.

Edward Stewart Holcomb to Miss Nancy May Eggleston, both of New York, May 3.

John H. Clements, Juneau, Alaska, to Miss Anne Mahoney of Los Angeles April 7.

Deaths

John Herr Musser ⊕ for many years professor and head of the department of medicine at Tulane University School of Medicine, died at his home in New Orleans, September 5, aged 64, of carcinoma of the lung.

Dr. Musser was born in Philadelphia June 9, 1883 and was the sixth member of his family in direct descent to become a physician. In 1908 he graduated from the University of Pennsylvania Department of Medicine in Philadelphia, where he became an associate in medicine in 1914 and assistant professor of medicine in 1920 serving until 1924. From 1912 to 1924 he was physician to the Presbyterian, Philadelphia General and Howard hospitals, all in Philadelphia. At the time of his death he was on the staffs of the Charity Hospital and Touro Infirmary, New Orleans. He had been a member of the Council on Medical Education and Hospitals of the American Medical Association since 1934, vice president and chairman of the Section on Pharmacology and Therapeutics, 1933-1934, chairman of the Section on the Practice of Medicine in 1937-1938 and member of the House of Delegates in 1928. He was for many years a member of the editorial board of the *Archives of Internal Medicine*.

Dr. Musser was a specialist certified by the American Board of Internal Medicine, on which board he had served as a member. He was a member of the Association of American Physicians, American Society of Clinical Investigation and the Association for Research in Nervous and Mental Diseases, American Clinical and Climatological Association, College of Physicians of Philadelphia and foreign corresponding member of the Society of Internal Medicine of the Asociación Médica Argentina, Buenos Aires. He had been president of the Tuberculosis Association of New Orleans, Child Welfare Association of New Orleans, was a fellow and past president of the American College of Physicians, of which he had been a member of the board of regents for many years. He was a trustee of the University of Pennsylvania and at one time president of the Louisiana State Board of Health.

During World War I Dr. Musser served in France as a major in the medical corps of the U. S. Army, and since 1938 he had been a colonel in the medical reserve corps. He received the Alumni Award of Merit of the University of Pennsylvania School of Medicine in 1940. Dr. Musser revised and edited three books, was the editor of *Internal Medicine* and compiled a history of the University of Pennsylvania School of Medicine class of 1908 entitled "Thirty Years After."

At various times he had been editor of the *American Journal of Medical Science*, and at the time of his death he was editor of the *New Orleans Medical and Surgical Journal*.

During recent years Dr. Musser had suffered seriously also with conditions affecting his heart, but with extraordinary courage he maintained his interests and activities to the very end. His contribution to the advancement of medical education and medical science in the United States was notable and will be long remembered.

JOHN HERR MUSSER, M.D., 1883-1947

Clay Ray Murray ⊕ Captain, U. S. Army, retired, New York; born in New York on Aug. 29, 1890; Columbia University College of Physicians and Surgeons, New York, 1912; professor of orthopedic surgery at his alma mater; specialist certified by the American Board of Surgery and the American Board of Orthopaedic Surgery; member of the American Surgical Association, American Academy of Orthopedic Surgeons and the American Association for the Surgery of Trauma; fellow of the American College of Surgeons; served during World War I; entered the medical corps of the U. S. Army as a first lieutenant on Jan. 14, 1918; retired with the rank of captain in July 1920 for disability in line of duty; consulting surgeon, Hackensack (N. J.) Hospital and Sharon (Conn.) Hospital; consultant at St. Joseph Hospital in Far Rockaway; affiliated with the Presbyterian Hospital and Vanderbilt Clinic; author of "Treatment of Injury by the General Practitioner"; contributed chapters to Christopher's "Textbook of Surgery"; died in the Harkness Pavilion June 14, aged 57, of cerebral aneurysm.

John Leonard Kantor ⊕ New York; born in Moscow, Russia, April 12, 1890; Columbia University College of Physicians and Surgeons, New York, 1912; associate clinical professor of medicine at the New York Post-Graduate Medical School and Hospital, Columbia University; specialist certified by the American Board of Internal Medicine; fellow of the American College of Physicians and the New York Academy of Medicine; member of the American Gastro-Enterological Association and the American Roentgen Ray Society; past president of the New York Gastroenterological Association; served during World War I and World War II; for many years chief of the gastrointestinal clinic at the Vanderbilt Clinic; gastroenterologist and associate roentgenologist at the Montefiore Hospital; gastroenterologist at the Beth David Hospital; consultant gastroenterologist at the Will Rogers Hospital, Saranac Lake, N. Y., National Jewish Hospital in Denver and Sharon (Conn.) Hospital; died in the Mount Sinai Hospital June 26, aged 57, of pulmonary embolism.

David Sanders Moore ⊕ Birmingham, Ala.; born in Clarence, Ala., April 11, 1886; Birmingham Medical College, 1908; member of the Southeastern Surgical Congress, Southern Medical Association and the Birmingham Surgical Society; fellow of the American College of Surgeons; specialist certified by the American Board of Surgery; president of the South Highlands Infirmary; affiliated with Jefferson Hillman Hospital; past president of the Alumni Association of the University of Alabama Medical School; died June 8, aged 61, of coronary occlusion.

Julius Bertram Charles Abels, New York; University and Bellevue Hospital Medical College in New York, 1939; Finney-Howell fellow in medicine at the Memorial Hospital for the Treatment of Cancer and Allied Diseases from 1940 through 1943, when he became assistant attending physician; on the courtesy staff of the Doctors Hospital; consultant in endocrinology at the Meadowbrook Hospital in Hempstead, N. Y.; died June 13, aged 33, of rheumatic heart disease.

Zadok Fowler Atwell, Amsterdam, Ohio; Starling Medical College, Columbus, 1906; veteran of the Spanish-American War and World War I; served on the staffs of the Mercy and Aultman hospitals, Canton; died May 3, aged 81, of coronary thrombosis and arteriosclerosis.

Henry Alden Baughn ⊕ Columbus, Ohio; University of Pennsylvania School of Medicine, Philadelphia, 1917; member of the Columbus Academy of Medicine; died in the Grant Hospital June 9, aged 54, of cirrhosis of the liver.

Ernest I. Bunker, Grantsburg, Wis.; Rush Medical College, Chicago, 1901; past president of the Burnett County Medical Society; served as county coroner and as president of the village and school board; formerly postmaster; for many years local health officer and local physician and surgeon for the Northern Pacific Railway Company; died in the Victory Hospital in Robbinsdale, Minn., June 14, aged 73, of cerebral hemorrhage.

Edward Francis Butler, Mosinee, Wis.; Chicago College of Medicine and Surgery, 1909; member of the American Medical Association; past president of the Ninth Councilor District Medical Society; served as member of the board of trustees and president of the village of Mosinee and when the village became a city became its first mayor; formerly postmaster; died June 5, aged 71, of carcinoma of the prostate.

Adolph Bohumil Cimfel, Scotia, Neb.; University of Nebraska College of Medicine, Omaha, 1939; member of the American Medical Association; first lieutenant in the medical reserve corps of the U. S. Army, not on active duty; on the staff of St. Francis Hospital in Grand Island; died in St. Mary's Hospital, Columbus, June 9, aged 33, of bronchopneumonia and brain tumor.

Fremont Alister Cummins, Los Angeles; New York Homeopathic Medical College and Flower Hospital, New York, 1917; served during World War I; on the staffs of the French, Methodist and Cedars of Lebanon hospitals; died in the Veterans Hospital, Van Nuys, Calif., June 18, aged 53, of massive cerebral hemorrhage.

Paul John Dunn, Pittsburgh; Temple University School of Medicine, Philadelphia, 1929; affiliated with the Mercy Hospital; died June 7, aged 42, of carcinoma of the stomach.

Earl Elvin Evenson ⊕ Wittenberg, Wis.; Northwestern University Medical School, Chicago, 1927; died in Wausau June 9, aged 46, of gastric carcinoma.

James Louis Fagan ⊕ New Brunswick, N. J.; University of Louisville Medical Department, 1914; fellow of the American College of Surgeons; served during World War I; on the staffs of the Middlesex General Hospital and St. Peter's Hospital, where he died June 7, aged 55, of myocardial infarction.

Edward Ambrose Flinn, Neodesha, Kan.; Miami Medical College, Cincinnati, 1882; died May 25, aged 90, of cerebral hemorrhage.

Alfred Davis Henkel, Winchester, Va.; University of Pennsylvania Department of Medicine, Philadelphia, 1887; member of the American Medical Association; died May 27, aged 86, of thrombosis.

David Ralph Landau, Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1903; member of the American Medical Association; died in the Michael Reese Hospital June 14, aged 71, of coronary occlusion.

William B. McClure, Lexington, Ky.; Louisville Medical College, 1883; for many years treasurer and past president of the Kentucky State Medical Association; served as a member of the county board of education; died June 10, aged 89, of arteriosclerosis.

Robert Louis McCorkle, Atlanta, Ga.; Emory University School of Medicine, Atlanta, 1941; member of the American Medical Association; interned at the Georgia Baptist Hospital; served during World War II; electrocuted in Gaffney, S. C., June 15, aged 30, when his automobile struck an electric pole.

Benjamin F. Mallory, Arlington, Kan.; Missouri Medical College, St. Louis, 1897; member of the American Medical Association; on the visiting staffs of the Grace and St. Elizabeth's Hospital in Hutchinson; died June 3, aged 76, of carcinoma of the pancreas.

Charles Fowler Merrill, Highland Park, N. J.; College of Physicians and Surgeons, Baltimore, 1902; member of the American Medical Association; served during World War I; on the staffs of the Middlesex Hospital and St. Peter's Hospital, New Brunswick, where he died May 29, aged 71, of organic heart disease.

John Charles Miller, Union City, Mich.; Kentucky School of Medicine, Louisville, 1893; Bellevue Hospital Medical College, New York, 1894; served during World War I; died in the Veterans Administration Hospital in Fort Custer June 11, aged 81, of pulmonary infarction and generalized arteriosclerosis.

Robert Hugh Monahan, International Falls, Minn.; Minneapolis College of Physicians and Surgeons, medical department of Hamline University, 1906; member of the American Medical Association; served with the British Army during World War I; affiliated with St. Barnabas Hospital, Minneapolis, and the Northern Minnesota Hospital; died in the Passavant Memorial Hospital, Chicago, June 3, aged 76, of cerebral hemorrhage.

Porter B. Orr, Asheville, N. C.; Jefferson Medical College of Philadelphia, 1901; member of the American Medical Association; for many years on the staff of the Asheville Mission Hospital; died June 6, aged 72, of cerebral thrombosis.

Edward Jennings Overstreet, Baxley, Ga.; Emory University School of Medicine, Atlanta, 1924; member of the American Medical Association; served during World War I; member of the board of education; died June 1, aged 48, of acute nephritis.

James Tressillian Padgett, New York; University Medical College of Kansas City, Mo., 1900; University of Louisville (Ky.) Medical Department, 1904; served on the staff of the Lutheran Hospital; died June 10, aged 71, of carcinoma of the lung.

Charles Ector Patterson ⊕ Tucson, Ariz.; University of Maryland School of Medicine, Baltimore, 1903; specialist certified by the American Board of Otolaryngology; fellow of the American College of Surgeons; served as a member of the staff, Desert Sanatorium of Southern Arizona and Institute of Research, Southern Methodist and Comstock Children's hospitals and St. Luke's-in-the-Desert Sanitarium; on the courtesy staff of the St. Mary's Hospital and Sanatorium; died June 10, aged 70, of coronary thrombosis.

Harvey Edwin Ramsey, Phoenix, Ariz., Cleveland-Pulte Medical College, 1896; Western Pennsylvania Medical College, Pittsburgh, 1900; member of the American Medical Association; on the staff of the Suburban General Hospital in Pittsburgh; died in the Good Samaritan Hospital June 7, aged 78, of pneumonia.

Thomas H. S. Roe, Rock Springs, Wyo.; Washington University School of Medicine, St. Louis, 1906; member of the American Medical Association; served as mayor; died suddenly in the Wyoming General Hospital, May 12, aged 66, of angina pectoris.

Paul Griffith Sanger ⊕ Santa Rosa, N. M.; University of Oklahoma School of Medicine, Oklahoma City, 1931; member of the Oklahoma State Medical Association; formerly a resident in neuropsychiatry at the Eastern Oklahoma State Hospital in Vinita; died in Tucumcari Hospital, Tucumcari, May 24, aged 45, of pneumonia following a lung abscess.

Norman Brown Saunders, Mount Vernon, N. Y.; Columbia University College of Physicians and Surgeons, New York, 1900; member of the American Medical Association; on the consulting staff of the Tarrytown Hospital in Tarrytown, New Rochelle (N. Y.) Hospital and the Grasslands Hospital in Valhalla; died June 6, aged 71, of pneumonia.

Charles Slater Shriver ⊕ Columbus, Ohio; Starling Medical College, Columbus, 1906; on the staff of the Mount Carmel Hospital; died June 10, aged 66, of cerebral hemorrhage and coronary thrombosis.

William W. Simms, St. Louis; American Medical College, St. Louis, 1912; died in the Barnes Hospital June 9, aged 74, of complications due to injuries received in an automobile accident in March.

John M. Smith, Poplarville, Miss.; Medical Department of Tulane University of Louisiana, New Orleans, 1893; died June 4, aged 79, of arteriosclerotic gangrene.

Ellen A. Starr Souder, Rockwell City, Iowa; Chicago Homeopathic Medical College, 1882; died May 17, aged 89, of coronary thrombosis.

William Steffens, Baldwin, N. Y.; Ernst-Moritz-Arndt Universitat Greifswald Medizinische Fakultät, Greifswald, Prussia, 1888; member of the American Medical Association; died May 20, aged 84, of diabetes mellitus, renal calculi and hypertensive heart disease.

Charles J. Stettheimer, Denver; University of Colorado School of Medicine, Denver, 1932; member of the American Medical Association; specialist certified by the American Board of Pediatrics; assistant in pediatrics at his alma mater; affiliated with the Children's Hospital, where he died June 11, aged 42, of pericarditis.

Jerome Aloysius Strack, South Orange, N. J.; St. Louis University School of Medicine, 1938; member of the American Medical Association; served in the medical corps of the U. S. Naval Reserve for two and a half years during World War II; on the staffs of St. Michael's Hospital in Newark and St. Mary's Hospital in Orange, where he died June 11, aged 34, of diabetes mellitus, acute nephritis and acute myocarditis.

Samuel Lanier Stringfield ⊕ Waynesville, N. C.; Jefferson Medical College of Philadelphia, 1905; past president of the Haywood County Medical Society; member of the staff of the Haywood County Hospital, of which he formerly had been chief of staff; died June 11, aged 66, of rheumatic heart disease.

John Emil Swanson, Sioux City, Iowa; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1899; member of the American Medical Association; served during World War I and as county coroner; died in the Swedish Hospital in Minneapolis June 1, aged 74, of arteriosclerosis and hypertension.

Harold Benjamin Thompson, Seattle; Rush Medical College, Chicago, 1906; specialist certified by the American Board of Radiology, Inc.; member of the American Medical Association, Radiological Society of North America and the American College of Radiology; on the staffs of the Children's Orthopedic Hospital and the Seattle General Hospital, where he died June 16, aged 64, of coronary disease.

Hubert King Turley ⊕ Memphis, Tenn.; Jefferson Medical College of Philadelphia, 1914; associate professor of urology at the University of Tennessee College of Medicine; specialist certified by the American Board of Urology; member of the Southeastern Surgical Congress and the American Urological Association; fellow of the American College of Surgeons; served during World War I; on the staffs of the Baptist Memorial, John Gaston and Methodist hospitals; died June 19, aged 55, of cerebral thrombosis and arteriosclerosis.

Cilie Hirschfield Weichsel ⊕ Teaneck, N. J.; College of Physicians and Surgeons, Boston, 1904; member of the Medical Society of the State of New York; died May 26, aged 69, of carcinoma of the transverse colon.

Elmer E. Welsh, Eaton, Ohio; Jefferson Medical College of Philadelphia, 1882; died June 2, aged 85, of chronic myocarditis.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Aug. 9, 1947.

A British Commonwealth Medical Council

In his presidential address at the annual meeting of the British Medical Association Sir Hugh Lett stated that the association had been exploring means whereby medicine throughout the commonwealth and empire can be advanced and can play its part in strengthening those bonds which mean so much and which in years to come may prove a pattern to the whole world. They had long been anxious that their relations with their colleagues overseas should be developed and become closer still, and this feeling was shared by them. To this end the association believed that greater opportunities should be provided for personal contact, so that views could be exchanged and difficulties discussed. In no other way could they have a complete understanding of each other's problems, nor could anything do more to strengthen relations than the development of personal friendships. The council of the association had therefore decided that the affiliated and daughter associations in the commonwealth should be invited to cooperate in establishing a British commonwealth medical council. Each would appoint its own direct representatives, and it was suggested that the meetings should be held in the principal centers overseas as well as in London. The objects of this council would be (1) to develop and maintain closer contact between practitioners in the United Kingdom and in the dominions and between practitioners in the various dominions; (2) to advance the status of British medicine; (3) to stimulate discussion and exchange of advice on matters of common interest; (4) to promote an exchange of professional facilities.

It is also proposed to establish an empire medical advisory bureau at the House of the British Medical Association for giving advice and help to those who come here from the commonwealth and colonies for postgraduate or undergraduate study. The work of the bureau will not be limited to giving advice on academic matters. It is intended to help socially in various ways, such as by assisting men to find accommodation and putting them in touch with their British colleagues.

The World Medical Association

The president went on to discuss a still further stage of professional cooperation. Last September an international medical conference was held in London on the initiation of the British Medical Association, and the World Medical Association was formed. Its first annual meeting will be held in Paris in September, and the delegates of at least thirty countries are expected to attend. Its objects are (1) to provide closer ties among national medical organizations and among doctors of the world by personal contact and other means in order to assist all the peoples of the world to attain the highest level of health; (2) to study the professional problems of different countries; (3) to organize an exchange of medical information; (4) to establish relations with the World Health Organization. This represents governments, while the association represents the medical associations of the world.

National Health in the Transition from War to Peace

The report of the Ministry of Health for the year ended March 31, 1946, which has just been presented to Parliament, sums up the health position in the difficult transition period from war to peace. During 1945 the health position was maintained at the same high level as during the six years of war. The return of so many soldiers and prisoners of war, often weakened and including many convalescents from and carriers of every known infectious or tropical disease, set a great problem, which was triumphantly solved. Thanks to the watchfulness of the intelligence and epidemiologic sections of the ministry and the alertness of the health officers, such dangerous invaders as typhus, smallpox and malaria were given little chance to spread. Apart from the general maintenance of health, 1945 was noteworthy in two respects: the mortality of children reached new low levels, far lower than those of 1939, which was mainly a prewar year; the infant mortality (46 per thousand live births) was well below any year preceding 1945. The maternity mortality (1.80 per thousand total births) was the lowest recorded. The civilian death rate, which included deaths due to war operations, was 12.6 per thousand below the average of the three preceding years.

Other satisfactory figures were the extraordinary reduction in recent years of the mortality from measles and scarlet fever in those under the age of 15, the country's good fortune during the war years in the mildness of influenza, the success in preventing enteric fevers and the decrease in diabetes and pneumonia mortality. New low records were set of both notifications and deaths from diphtheria (18,596 and 722 respectively). Mass immunization against diphtheria was introduced in 1940, with deaths from the disease each year since 1941 recorded as 2,641, 1,827, 1,371, 934 and 722. It is estimated that at the end of 1945 58 per cent of the children under 15 were immunized. The downward trend of the mortality from tuberculosis has been resumed after the rise in the war years. Mass radiography of civilians shows that between 3 and 4 persons per thousand examined had previously unsuspected but active pulmonary tuberculosis. The number of deaths from cancer was 73,753, an increase of 2,065 over 1944. The active research on the disease, which has been going on for many years, so far has been unable to stem the increase.

Foreign Doctors to Be Granted Permanent Registration

The war brought to this country a number of doctors from all parts of the world, many of them fleeing from Nazi persecution, who under the ordinary law could not be admitted to the British Medical Register on the strength of the qualifications obtained in their own country. But, because of the shortage of medical man power to meet the demands of the war, it was evident that these foreign doctors would be a valuable help. The law was therefore amended, granting temporary registration to those who served in the Allied forces or undertook certain specified kinds of medical employment. Citizens of the United States were given registration solely on the strength of their American diplomas. We were fortunate in having among the temporarily registered doctors a substantial proportion of distinguished specialists. The number of the temporarily registered in February 1946, when temporary registration ceased, is estimated as between 3,500 and 4,000, but this included a large number of doctors in the American and Canadian forces who have since left the country. It is estimated that the number now is between 1,500 and 2,000, including Polish doctors who are registered under the Polish Resettlement Act.

The government has had to consider what is to happen to the foreign doctors when temporary registration comes to an end next December. They have decided that those who have rendered useful service to this country and desire to remain should be allowed to practice here. Many of them are elderly and it would hardly be reasonable to require them to study for British qualifications, even if facilities were available in the British medical schools. A bill has therefore been prepared and has passed its first reading empowering the Medical Council to grant permanent registration, which will be accorded only on evidence of character, education and satisfactory service, so that there will be no lowering of the standard [illegible] by the Medical Council.

PARIS

(From Our Regular Correspondent)

Aug. 20, 1947.

Control of Films Dealing with Medical Subjects

A number of films dealing with medical problems have recently been shown. Their influence on the public has been at times instructive and salutary and, at other times, harmful and even tragic. The National Academy of Medicine has been led to consider this problem by two observations presented at one of its last meetings by E. Redslob (Strassburg) and J. Sedan (Marseilles):

A girl 14 years of age, physically sound, saw a motion picture about a blind girl operated on for cataract, who drowned herself afterward for sentimental reasons. Thereafter this young girl presented psychic troubles and a hysteric amaurosis; a psychiatrist succeeded in curing her within a comparatively short time.

A girl aged 19, seriously myopic, was admitted to the hospital for treatment of a detached retina; she had previously lost one eye through the same trouble and was to be operated on in a few days. The girl attempted to commit suicide by taking a barbituric acid derivative, which left her hovering between life and death for eight days. Eventually, the operation was successfully performed and the girl regained four tenths of her vision. The idea of committing suicide had been suggested to her by a film showing a young woman with double detachment of the retina, who was told by an eminent ophthalmologist that she would become blind (a false prognosis), and who committed suicide.

Both ophthalmologists emphasize that the same danger of the nefarious influence of certain films exists in the field of general surgery as well as in other branches of medical practice.

The National Academy of Medicine has expressed the wish that "in the future, the film censorship, before taking its decision and in special cases, take the opinion of qualified medical and surgical technicians, who, thanks to their expert advice, will prevent the recurrence of such incidents, which are most unforgivable as they are connected with the exploitation of material interests."

First Cases of Tularemia in France

Violle in 1930, Rochaix and Maurin in 1932 and Brumpt in 1937 drew attention to the possible appearance of tularemia in France. Richez suspected its presence in 1938, but no bacteriologic proof could be obtained. In March 1946, at a meeting of the Medical Society of the Paris Hospitals, Girard, Blass and Ely presented the first observation on 2 patients who caught the disease when skinning a hare. Their children, who ate the hare, remained unaffected. Lately, Professor Girard of the Paris Pasteur Institute has reported the existence of two different seats of tularemia (2 cases in the Gironde and 1 in the Dijon district). The first case of animal tularemia was reported to the Veterinary Academy last March. At one of the latest meetings of the Medical Society of the Paris Hospitals René Martin, P. Mercier and R. Peret reported a case of human tularemia due to the bite of a wild boar. This is noteworthy on account of the mode of contamination, which is exceptional, and also from the epidemiologic point of view, as the wild boar is an animal which moves with great rapidity and is therefore capable of transporting the disease to a distance of hundreds of kilometers. The authors say that neither penicillin nor sulfonamides drugs had curative action on the disease. As regards prophylaxis, there are several ministerial orders of 1937 and 1938 prohibiting the importation from infected countries of living or dead animals sensitive to the disease; on the other hand, by a decree of the 19th of July 1947 of the Ministry for Public Health, human tularemia is added to the list of diseases that must be declared.

New Method of Hematotherapy

Claude Bernard insisted on the primordial role of the reserve substances in the phenomenon of cellular nutrition and regeneration. Portier and Jolly emphasized the propriety of nutritional reserves of the lymphocytes in deficient, anemic organs or in those in the course of growth. P. Brocq and T. Stephanopoli (Glacière and Hôtel-Dieu hospitals) have shown by their work that red blood cells have also a metabolic function and that, on account of their exceptional content of iron, other cellular constituents and specific proteins, they represent real nutritional reserves. The authors have ascertained this capability in the treatment of wounds, especially of those in which circulation is deficient, by providing the atonic tissues with red blood cells in the form of powder. The powder of hematids, from the blood of the patient or of one of his relatives, is obtained by drying the red blood cells at the temperature of the body after a previous separation of the other elements of the blood and a suitable fixation in alcohol. With the powder of hematids, the tissues start proliferating again by means of a phagocytic activity, cicatrization is accelerated and the peripheral circulation improves rapidly. Moreover, the authors have used total blood and isolated hematids in the treatment of thrombophlebitis, thus showing the superiority of the latter treatment, especially as regards the restoration of neurohumoral equilibrium. The isolation of the red blood cells is obtained after sedimentation in a citrated medium, complete decantation of the supernatant liquid and elimination of the superior layer of the sediment; at the time of use, the hematids are emulsified in an isotonic and new serum. The authors think that this isolation of the red blood cells, which are kept for twenty-four to forty-eight hours in a preserving medium to produce the growth of microcytes with a high peroxidase intake, still definitely increases the therapeutic action.

Death of Professor Louis Texier

Professor Louis Texier, a surgeon well known as the Chief of the Lyons School, whom a large number of surgeons of this city consider as their master, died at 76 years of age. A disciple of Cordier, Poncet and others, he was promoted to surgeon to the Lyons Hospitals in 1900 and became a university professor in 1901. In 1914 he was appointed professor of surgical clinics and succeeded Poncet. As a practitioner and a professor, he particularly devoted himself to postoperative treatment and, to foster this aim, attached an expert clinician to his surgical staff. Moreover, he considered that the perfection of the operation derived from the attention given to the preliminary observation of the patient. Among his many works are those on gastric surgery, gastroduodenal hemorrhage (for which he proposed jejunostomy in 1908) and the pseudoneoplastic form of appendectomy in aged patients. His works on the surgical treatment of uterine fibromas are still of value. In 1920 he was elected president of the Congress of Surgery. He was a national associate to the Academy of Surgery.

Miscellaneous

At a general meeting of the Association for the Paris Swiss Hospital in Paris it was decided by unanimous vote to establish a Swiss Hospital in Paris, which will comprise a clinic for surgery and general medicine.

At the Paris Pasteur Institute, Professor René Dubos of the Rockefeller Institute of New York read a paper on new methods of culture of the Bacillus tuberculosis and their application to the study of the virulence of the organism.

Congress of Clinical Biology

The French Society of Clinical Biology has organized the first International Congress of Clinical Biology under the presidency of Professor Polonowsky, to take place November 20-22.

BELGIUM

(From Our Regular Correspondent)

Aug. 8, 1947.

Twenty-First Session of the Medical Days of Brussels

The twenty-first session of the Journées médicales of Brussels came to an end in an atmosphere of great enthusiasm. All the foreign delegations were profoundly impressed with the atmosphere of work and prosperity which at present prevails in Belgium. Dr. Loicq succeeded Dr. Beckers in the important function of secretary general and as the organizer of this truly international convention.

Scientific Humanism

The opening address was given by Professor O. Weill, president of the Journées médicales. It was a manifestation of scientific humanism of high quality. He drew the balance sheet for our generation and affirmed that each year will find a new strategy and a new scientific tactic. At present as it concerns medicine, the pastoral controversies have fallen and one finds oneself confronted with fact that is considered as acquired knowledge. He reviews successively the discovery of antibodies, of allergy, the notion of the sympathetic pharmacology and the application in this sphere of the sympatheticotonics, the vagotonics, without counting the possible operations. He mentions the vitamins, the endocrines, the synthetic hormones, the sulfonamides and penicillin; and finally the sensational intrusion of physics. There are the new technics ultrafiltration, ultracentrifugation, the rays and, crowning all, the nuclear physics. And here we have to consider the infinitely small, which is also the infinitely powerful. The isotopes appear. Henceforth one creates new chemical entities: the transuranic elements. This creation is for good and for evil. At present one is confronted with more than a hundred models of the atom, of which some are no longer geometric reality but constitute simple mathematical entities. Henceforth it is to be this mobility, this oscillation of ideas which will constitute the characteristic of contemporaneous science.

Conferences and Demonstrations

Numerous conferences and demonstrations drew a great influx of participants. There was (1) that of Professor Levaditi, concerned with the mechanism of antibiotic action of penicillin and streptomycin in experimental infections produced by various pathogenic germs. Then there was (2) the theory of primary calcification, which was discussed by Dr. Marcel Dallemagne. One of the best attended conferences was (3) that of Dr. Albert Claude of the Rockefeller Institute, which was concerned with the electron microscope and its application to normal and cancerous cells. Claude presented views showing twin microblasts in the midst of cancerous cells, the study of which is certain to change the nature of cancerology. The conference of Dr. L. D. Erland, professor of surgery at the University of Groningen, (4) took up the problem of transthoracic esophagectomy for cancer of the esophagus. The illustrating projections showed extraordinary surgical results, notably as they concern the establishment of a thoracic stomach. A very curious conference (5) was devoted to the physical pains resulting from moral conflict. It was held by Dr. Henri Flournoy of the University of Geneva, who showed a novel application of treatment with psychoanalysis.

Occupational Reeducation of the Tuberculous

The Belgian Society of the Scientific Study of Tuberculosis has devoted a session to the different points concerning the occupational reeducation of tuberculous patients. Courtois and Gyselen reviewed the problem in its entirety. The occupational reeducation in all sanatoriums must be an integral part of the treatment of the tuberculous with an arrested process.

What good will it be to devote so much effort to the treatment of tuberculous patients if the ultimate reclassification is lost sight of? The resumption of work must be the preoccupation of the patient and his physician. A special organization has been created for this, the social service, which, subordinate to the medical directives, will aid convalescents to resume in society a role in keeping with their capacity for work, with their aptitudes, their tastes and their personal and family interests.

Thus it is necessary to envisage two periods: (1) the complement to the sanatorium cure and (2) the transition between the sanatorium and normal active life. The first is realizable anywhere at little expense; it involves only nonremunerative work under medical supervision (horticulture, stock raising, care of patients and diverse maintenance work). The second implies the availability of good workshops where medical influence must not cease to be exercised. In these workshops the work can be carried out according to two principles: industrialized and immediately remunerative work or educative work more interesting from the professional point of view of the convalescent but infinitely more costly; this type of organization cannot be developed without the intervention of public powers.

Ultimately and from most points of view, artisan work done in the domicile will be that which is best for the cured tuberculous patient or for the one whose process is arrested; it is often the best utilization of the partial work capacity, but modern society has hardly any place for this. It is also necessary that the cured patient do the work which best conforms to his capacities and which is best paid.

Medical Examination of Chauffeurs

In the *Moniteur* there appeared a decision bearing on the regulation of the selection and medical supervision of chauffeurs of public service busses and cars and of other passenger motor vehicles charging fare. This regulation says especially that the medical examination shall determine the absence of disease or of all mutilation, malformation or infirmity of a nature to hinder or impede, even temporarily, the normal handling of the vehicle as well as of ordinary repair work. This medical examination also involves a psychotechnical test appropriate to the functions of a driver of motor vehicles. The disqualifying disorders and anomalies as well as the details of the psychotechnical test are determined conjointly by the minister of public health and family and by the minister of communications. The administration of the health service will establish a file for each candidate, to be kept in its archives. The medical information in this file may be communicated only to the candidate's physician.

The Profession of Pharmacist

On the occasion of the celebration of the centennial of the School of Pharmacy at the University of Brussels, Professor Wattiez, vice president of the school of medicine and pharmacy, delivered a dissertation on "Pharmaceutical Instruction and the Profession of the Pharmacist." The immediate aim of such instruction is evidently the training of the practicing pharmacist. The pharmacist finds himself in a paradoxical situation, which obliges him to dispense under his own responsibility medical products the majority of which are specialties and which therefore escape his examination. The Belgian pharmaceutical industry is not subject to any control on the part of the state and is not even obliged to operate with competent persons having university training.

To remedy this curious situation, Professor Wattiez proposes to recognize two types of pharmacists, the apothecary pharmacist and the industrial pharmacist, to divide the responsibility involved in the preparation and the delivery of medicaments. He declared himself also in favor of the apportionment of apothecary pharmacists in accordance with the density of the population and proposed that the profession should be practiced only by persons who have completed their twenty-fifth year.

The administrative council of the University of Brussels has approved the creation by a school of pharmacy of a special license in the pharmaceutical sciences intended to develop pharmacists desirous of devoting themselves to laboratory work. This license comprises several sections: (1) biologic and bromatologic analyses, (2) toxicologic chemistry, (3) industrial pharmaceutic chemistry and (4) alimentary industrial chemistry. This new instruction requires the collaboration of the university and industry. Wattiez is of the opinion that this collaboration can be profitable for both.

Superior Council of Physical Education and Sports

Prof. Dr. Vanderwael believes that the development of sports in Belgium merits the attention of public authorities. Under governmental direction physicians licensed in physical education should control the physical activities of all the school population, of adolescents and of adults. He thinks that the practice of physical education in schools according to a program and generally adopted directives would lead to fewer excesses in sports among young people. Youth likes to spend its energies, and it is necessary to give it an opportunity to prepare itself by gymnastics and to develop itself by sport and games. With the proper control there will be less regrettable adventures. He favors the extension of medical inspection to all and hopes for the full time employment of physicians.

Collaboration Between Professor and Students

The Faculty of Medicine of Liége has established a commission charged to develop means of contact to be established with the delegates of the students with a view of joint study of questions relating to the organization of the medical and pharmaceutical studies: programs, length of courses, time tables, organization of the clinical instruction, coordination between the different instructions, intellectual and physical health of the students. This committee has been wise in obtaining the opinions of former students, who are best fitted to distinguish between the essential and the secondary, between the permanent and the ephemeral. This step approaches the staff-student committees which function in several British and American universities.

ITALY

(From Our Regular Correspondent)

FLORENCE, July 17, 1947.

The Mechanism of the Beneficial Effect of Electroshock Treatments

Professor Ugo Cerletti, director, Neuropsychiatric Clinic, University of Rome, reported to a large audience at the Health Institute in Rome the results of experiments to clarify the mechanism of the effect of electroshock. Some years ago Professor Cerletti suggested the use of intensive but highly rapid electrical discharges for the treatment of certain psychoses, particularly of melancholia.

In his studies of the manner in which electroshock produces its beneficial effect, Cerletti became convinced that the curative factor is not represented by the electricity but by the epileptic attack resulting from the short electric shock. Cerletti says that the epileptic attack or coma is an extreme risk to which the nervous system is submitted and, by the effort of overcoming it, extreme biochemical reactions of a defensive and vitalizing character are provoked. He submitted groups of swine to a variable number of electric shocks and obtained from the brains of the animals specific extracts which he collected in vials with the intention of using them therapeutically. For control purposes he also prepared extracts from the brains of swine which did not receive the electric shock treatment.

After both series of extracts were found to be innocuous to himself and to many other persons, he studied the effect of those injections in melancholia, a disease which responds best to electric shock. While extracts from the brain of animals not submitted to electroshock produced no change in the morbid condition of patients to whom they were administered, important changes ensued from the injections of the extracts of the shocked brains. Rapid recovery resulted in several patients; others presented unquestioned improvement; in others the disease remained unchanged. In almost all the cases with a favorable course the most typical effects consisted in the cessation of the obstinate insomnia and anxiety state, and improvement of the behavior. Without drawing definite therapeutic conclusions from this experience, it seems that the shocked brain differs "humorally" from the nonshocked brain.

In carrying his investigations further, Cerletti attempted to specify the defensive power of the substances obtained from the shocked brain of swine, and he selected for experimentation a disease of the brain with a definite and fatal course: rabies.

These experiments convinced him not only that the brain treated with electroshock contains substances which do not exist in the normal brain, but that these substances have a high defensive power against some morbid factors. Cerletti has coined the term "acroagonine" for these substances, or substances resulting from extreme effort (struggle).

BRAZIL

(From Our Regular Correspondent)

SÃO PAULO, Aug. 12, 1947.

Social Aspects of Tuberculoid Leprosy

Dr. Nelson Souza Campos, chief of the leprosy department of São Paulo, in collaboration with Drs. A. Rotenberg and L. M. Bechelli, pointed out some social aspects of leprous patients in a paper read before the Sociedade Paulista de Leprologia. They called attention to the favorable prognosis in cases of tuberculoid leprosy which show a positive Mitsuda lepromin reaction. The stigmatizing word "leprosy" is used for those patients with the worst possible effect on their morale. While in the past all patients with leprosy had to be segregated, now with a better knowledge of the epidemiology of the disease the tuberculoid patients are allowed to remain free from isolation and still later even from severe control or treatment. A further step would be to prevent the moral shock and social ruin from the diagnosis of "leprosy." A completely different name should be found as a substitute. In the meantime the leprosy department of São Paulo has been following lately the policy of recording such persons only as "suspects" and keeping them under minimum control.

New Concept of Hepatic Disease

The general concept of liver and biliary tract diseases in which there are no well defined and constant lesions is changing rapidly, according to a paper read by Dr. João Montenegro before the surgical branch of the Associação Paulista de Medicina. The right upper abdominal quadrant pains and the symptoms of dyspepsia, long ago supposed to be due to liver insufficiency and later on thought to be due to chronic noncalculous cholecystitis, are, in the majority of cases, due to irritation and dyskinesia of the duodenum or hepatic flexure of the colon or to both; they are brought forth by foodstuffs which are not well tolerated. The dominating idea ought to be that of dyskinesia of the digestive canal elicited by foodstuffs on intestines irritated by unknown causes but which may perhaps be allergy in a wider sense, psychosomatic changes, perturbed biochemical or endocrine functions, vagosympathetic changes of neuralgic type or entities of that sort. Only when the history, physical examination, cholecystography and duodenal intubation, correctly carried on, show clearly an organic lesion, will operation be indicated. Otherwise treatment is clinical on the basis of specially adapted diet for each case.

Correspondence

LEUKEMIA IN RADIOLOGISTS

To the Editor:—In the article on "The Longevity and Mortality of American Physicians, 1938-1942" (The Journal, August 9). Dublin and Spiegelman state that "the greatest excess in the mortality of physicians is found from leukemia, their death rate from this cause being 175 per cent of that for white males in the general population."

In a statistical study on "Leukemia in Radiologists" (*Radiology* **42**:275 [Sept.] 1944) I pointed out that the incidence of leukemia deaths in nonradiologic physicians in the fifteen year period between 1929 and 1943 inclusive was 0.44 per cent. The incidence of leukemia deaths in adult white men above the age of 25 (and also above the age of 30) was 0.33 per cent of deaths with the cause given in the biennium 1939-1940, according to the figures of the U. S. Bureau of the Census (3,932 leukemic deaths in 1,172,036 above the age of 25 in white males). This makes the increased incidence in nonradiologic physicians 133 per cent, which is less startling than 175 per cent. However, when the situation of the radiologists is examined, a most astounding difference is found. As I pointed out, the incidence of leukemia in radiologists is over ten times as great as in nonradiologic physicians, and this difference is quite significant from a statistical analytic point of view.

My follow-up since the period covered in this report shows the same trend and will be the subject of a subsequent report. In view of this decided difference of the incidence of leukemia in radiologists, it does not seem improbable that the 33 per cent increase in incidence of leukemia in nonradiologic physicians above the general adult white male incidence may in large part or perhaps wholly (barring better diagnosis in physicians) be explained by that not inconsiderable segment of nonradiologic physicians who use fluoroscopes, x-ray machines and radium in their practice, many of whom do *not* take proper protective precautions. It takes only an additional three nonradiologic physicians throughout the country to die of leukemia in a year to raise the incidence from 0.33 per cent to 0.44 per cent! The implications are plain. It behooves any one using any of the aforementioned forms of radiant energy to employ standard measures for self protection, even though these cannot necessarily afford complete protection. The second implication is that, if the radiologists who developed leukemia employed these standard measures of self protection routinely, then these measures are insufficient to protect against this occupational hazard.

Herman C. March, M.D., Philadelphia.

CLINICAL AID TO ALASKA

To the Editor:—I am writing in regard to the team of five men who recently toured a portion of the Territory of Alaska. The object of this trip was to gain an impression and summarize some of the most urgent medical needs of the people of Alaska.

On about April 1, 1947 I accepted the position of Orthopedic Surgeon for the Territory of Alaska with the object of summarizing the orthopedic problem of Alaska and establishing and operating a small orthopedic center in Sitka. Distances and lack of communication as well as limited funds plus the high rate of pulmonary tuberculosis, which in turn contributed to a large number of cases of involvement of the bone, presented a problem which seemed almost overwhelming. All of us realize that we are in urgent need of help from the persons within the territory as well as from those in the states. It was also an obvious fact that reports from persons within the territory would not be as important as those from disinterested groups as persons who might not have a mercenary reason for asking aid for Alaska.

There have been many visitors to the territory. In fact, so many of these groups have been through on inspection tours that it has become somewhat of a joke about persons who come to Alaska simply to see the country and catch a few fish. The residents of the territory look on these visitors with a jaundiced eye.

It was therefore a welcome change to meet the men of the group who recently visited here. They were obviously well chosen. All reports indicate that they were hard workers. They performed an incredible amount of work in the short period of time they were here at Sitka. I met them at a luncheon at the Rotarian Club and have also talked to a great many of the residents in this area since they departed. The opinion was unanimously favorable, and I believe that the American Medical Association is to be congratulated on the physicians selected and the work that this group of men accomplished while in Alaska. The members of this group, whose names are Drs. George Milles, Arthur Bernstein, Joseph Silverstein, Harry E. Barnett and Jack Fields, have left us with increased hope that the public and the authorities in the United States will become more cognizant of our need for help.

Philip H. Moore, Orthopedic Surgeon,
Mt. Edgecumbe Hospital,
Sitka, Alaska.

THE LONGEVITY AND MORTALITY OF AMERICAN PHYSICIANS

To the Editor:—The article "The Longevity and Mortality of American Physicians, 1938-1942" in The Journal, August 9, by Dr. Dublin and Mr. Spiegelman is impressive and pertinent. These authors have written convincingly on an all important subject and one, according to the report, of special interest to physicians. The writers have apparently proved that coronary diseases are 80 per cent more frequent in male physicians than in a comparable group of men in the average population. It is serious enough to know that heart diseases are the main cause of death in this country and that coronary diseases are the most significant of these, but now we learn that physicians suffer from coronary diseases to a greater degree than others. However, I believe this can be remedied.

There are two chief divisions of coronary diseases, as my colleagues and I have shown. The classic "acute coronary occlusion" is a disease characterized by sudden, complete, irreversible occlusion of the coronary lumen. "Acute coronary insufficiency" is a deficiency of the coronary circulation due to discrepancy in the demands of the myocardium and its available blood supply. It is usually transient and reversible, although its effect on the myocardium may be permanent. Angina pectoris is a transient episode of acute coronary insufficiency.

In acute coronary occlusion there is no direct means of prevention and treatment. It is as common in the sedentary person as in the laborer (Master, A. M.; Dack, Simon, and Jaffe, H. L.: The Role of Effort, Trauma, Work and Occupation in the Onset and Subsequent Course of Coronary Artery Occlusion, *M. Ann. District of Columbia* **10**:79 [March] 1941). During the attack the treatment is primarily symptomatic, and the specific treatment is for the complications. Quite the contrary holds true in acute coronary insufficiency. It is generally preventable and can be specifically treated. Elimination of physical, mental and emotional strain; administration of vasodilators like nitroglycerin; digitalis, quinidine, mecholyl for tachycardias; penicillin, streptomycin and sulfonamides for infections; intravenous saline solution, plasma and repeated blood transfusions, and administration of oxygen for shock or hemorrhage and finally digitalis, mercurial diuretics, acidifying drugs, a salt free diet for acute heart failure in patients suffering from coronary diseases will prevent the development of myocardial infarction incident to acute coronary insufficiency. These and many other measures are always ameliorative and may indeed be life saving (Master, A. M.; Dack, Simon; Grishman, Arthur; Field, L. E., and Horn, Henry: Acute Coronary Insufficiency: An Entity—Shock, Hemorrhage and Pulmonary Embolism as Factors in Its Production, *J. Mount Sinai Hosp.* **14**:8 [May-June] 1947).

The physician does not appreciate that episodes of acute coronary insufficiency are just as frequent as attacks of acute coronary occlusion. In a survey of office patients suffering from acute coronary diseases approximately half were instances of acute coronary insufficiency. My colleagues and I have gathered data from the hospital postmortem table and from figures published by medical examiners to show that the incidence is from 25 to 40 per cent of all fatal acute coronary diseases.

My purpose then in writing this letter is twofold: To draw a sharp distinction between acute coronary insufficiency and acute coronary occlusion and to emphasize my agreement with Dr. Dublin that physicians do not lead a "normal tempo of living." They work long hours, they are called out at night, they rush through their meals, they are subjected to mental stresses beyond those that prevail in other professions and occupations. They expose themselves to a variety of conditions which may act as precipitating factors in acute coronary insufficiency. How often has a physician, on a freezing February night, suffering from a cold himself, called on the telephone to see a patient, refused to make the visit? Not once in my experience.

Physician heal thyself!

Arthur M. Master, M.D., New York.

ALLERGIC PERITONITIS

To the Editor:—With reference to the case of "Allergic Peritonitis" reported in The Journal July 19, I do not think Sison and his co-workers are entirely justified in referring to it as "one form of allergy which has not been reported heretofore." In his monograph on "Food Allergy" in 1931 Rowe refers to a case characterized by acute abdominal crises found due to the ingestion of crab. At operation in one of the attacks there was found "diffuse congestion of intestinal coils with a considerable amount of gray sterile fluid." Fever, leukocytosis and the clinical signs of an acute condition of the abdomen had been present, but eosinophilia was apparently not noted.

There is the classic instance, described by Cooke, of recurrent abdominal crises in a woman of 24 which had begun in infancy. In each paroxysm there was fever as high as 104 F., leukocytosis to 28,000 and physical findings "as extensive as in general peritonitis." Removal of milk from the patient's diet effected a complete cure over a nine year follow-up period (*Bull. New York Acad. Med.* **9**:5, 1933). Althausen, Deamer and Kerr observed several instances of "The False Acute Abdomen," as presented in the *Annals of Surgery* (**106**:242 [Aug.] 1937 and described a case with signs of peritoneal irritation. Laparotomy was performed and urticaria of the peritoneum found, as proved by microscopic examination of the otherwise normal appendix. Wheat was found to be an important causative factor in that case.

In the *Annals of Internal Medicine* (**23**:1 [July] 1945) I reported 5 cases of "Benign Paroxysmal Peritonitis." Repeated crises of abdominal pain, fever and leukocytosis with signs of peritoneal irritation recurred over many years. Since then I have seen 7 more cases. In 2 there was hay fever and in a third asthma; in several there was a strong familial history of allergy; 1 patient had urticaria with his attacks.

Eosinophilia was absent in the acute episodes in all cases but was present, although in moderate degree, in the free interval in 2 instances. In none of the 5 cases in which it was possible to employ rigid trial diets was it possible to determine a definite food allergy. Skin tests were of little value. One woman patient gave a history that within three days after the birth of each of 3 children she had one of her typical acute febrile abdominal attacks, so that some form of puerperal infection was suspected. However, in none of the cases did ascites develop, as occurred in the case of Sison and his collaborators. That there was actual involvement of the peritoneum is indicated by the operative finding of a diffusely edematous peritoneum with a small amount of free fluid in 1 of the cases and definite peritoneal hyperemia in a second case. Incidentally, it is of interest that 5 male members of a family are affected by this disease.

The case reported by Sison and his colleagues adds supporting evidence to the concept that the allergic person is especially prone to acute, reversible peritoneal reactions. In many instances these simulate closely a surgical abdomen and all too often there is neither eosinophilia nor urticaria to warn the surgeon that he is dealing with a nonsurgical process.

Sheppard Siegal, M.D., New York.

STREPTOMYCIN AND EOSINOPHILIA

To the Editor:—I should like to comment on Dr. George T. Harrell's letter published in The Journal, August 2, page 1198.

In chronic infectious diseases, especially in tuberculosis, where progression and retrogression of lesions frequently occur simultaneously, the diagnostic and prognostic evaluation of the eosinophils is hardly possible. Even in far advanced and progressive cases their number is reduced to a much lesser extent and much less regularly than in acute suppurative conditions. Even if eosinophilia were a constant and reliable sign of healing in tuberculosis, the excessive increase in number to above 30 per cent—as seen in some cases undergoing streptomycin treatment—would be out of proportion and hardly explainable by Dr. Harrell's conception of liberation of firmly bound bacterial lipids. In other words, the often excessive number itself points to a toxic-allergic phenomenon rather than to an "eosinophilia of convalescence."

The fact that the eosinophilia rises to a peak and then recedes while therapy is still continued does not speak against its allergic origin. This is a known feature of both gold and neoarsphenamine treatments without any proved correlation between result of treatment and eosinophilia. On the other hand, it has been described that skin eruptions as to whose allergic nature there is but little doubt may also appear and disappear while streptomycin treatment is going on uninterruptedly. It remains to be seen whether streptomycin itself or some of its impurities are responsible for this allergic eosinophilia.

At this hospital in 8 pulmonary cases in which streptomycin was administered for four months, 2 showed excessive eosinophilia, 47 and 35 per cent respectively. Clinically and radiographically these 2 cases were neither the best nor the worst results in the series, the other 6 showing slight or no eosinophilia. The patient with the peak of 35 per cent eosinophils had a relapse within one month following completion of treatment while still having about 10 per cent eosinophils.

Even if the presence or absence of eosinophilia ever could be used as a means of estimating the efficacy of streptomycin treatment, eosinophilia would not have the same significance that reticulocytosis has in pernicious anemia. Reticulocytes not only are indicators but, being young erythrocytes, represent at the same time part of the result of the treatment, namely, newly formed, functionally adequate, vitally important elements of the blood.

Laszlo S. Arany, M.D.,
U. S. Veterans Hospital,
Walla Walla, Wash.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

NATIONAL BOARD OF MEDICAL EXAMINERS
EXAMINING BOARDS IN SPECIALTIES

Examinations of the National Board of Medical Examiners and the Examining Boards in Specialties were published in THE JOURNAL, Sept. 13, page 113.

BOARDS OF MEDICAL EXAMINERS

ALABAMA: *Examination.* Montgomery, June 22-24, 1948. Sec., Dr. D. G. Gill, 519 Dexter Ave., Montgomery 4.

ARIZONA:* *Examination.* Phoenix, Oct. 7-8. Sec., Dr. J. H. Patterson, 826 Security Building, Phoenix.

ARKANSAS:* *Examination.* Texarkana, Nov. 6-7, 1947. Sec., L. J. Kosminsky, Texarkana. *Eclectic.* Little Rock, Nov. 6. Sec., Dr. Clarence H. Young, 1415 Main St., Little Rock.

CALIFORNIA: *Written.* Sacramento, Oct 20-23. *Oral.* Los Angeles, Nov. 8-9. Sec., Dr. Frederick N. Scatena, 1020 N. St., Sacramento 14.

COLORADO:* Denver, Oct. 8-11. *Final date for filing application is* Sept. 20. Sec., Dr. J. B. Davis, 831 Republic Bldg., Denver 2.

CONNECTICUT: *Examination.* Hartford, Nov 11-12. Sec., Dr. Creighton Barker, 258 Church St., New Haven.

DELAWARE: *Examination.* Dover, Jan. 13-15. *Endorsement.* Dover, Jan. 20. Sec., Dr. J. S. McDaniel, 229 S. State St., Dover.

DISTRICT OF COLUMBIA:* *Endorsement* Washington, Sept. 8. Sec., Commission on Licensure, Dr. G. C. Ruhland, 6012 Municipal Bldg., Washington.

FLORIDA:* *Examination.* Jacksonville, Nov. 25-26. Sec., Dr. Harold D. Van Schaick, 6675 Windsor Lane, La Gorce Island, Miami.

GEORGIA: Atlanta, Oct. 14-16. Sec., Mr R. C. Coleman, 111 State Capitol, Atlanta 3.

HAWAII: *Examination.* Honolulu, Jan. 12-15, 1948. Sec., Dr. S. E. Doolittle, 881 S. Hotel St., Honolulu, T. H.

IDAHO: Boise, Jan. 13-15. Sec., Miss Estella S. Mulliner, 355 State Capitol Bldg., Boise.

ILLINOIS: Chicago, Oct. 14-16. Supt. of Registration, Dept. of Registration and Education, Mr. Philip M. Harman, Springfield.

INDIANA: *Examination.* Indianapolis, June 1948. Sec., Board of Medical Registration and Examination, Dr. Paul R. Tindall, K of P Bldg., Indianapolis.

KANSAS: Topeka, Dec. 3-4. Sec., Board of Medical Registration and Examination, Dr. J. F. Hassig, 905 N. 7th St., Kansas City.

KENTUCKY: *Examination.* Louisville, Sept 22-24. Sec., State Board of Health, Dr. P. E. Blackerby, 620 S. Third St., Louisville 2.

MAINE: Portland, Nov. 12-13. Sec., Dr. A. P. Leighton, 192 State Street, Portland.

MARYLAND: *Medical Examination.* Baltimore, Dec. 9-12. Sec., Dr. Lewis P. Gundry, 1215 Cathedral St., Baltimore. *Homeopathic Examination.* Baltimore, Dec. 9-10. Sec., Dr. J. A. Evans, 612 W. 40th St., Baltimore.

MASSACHUSETTS: *Examination.* Boston, Nov. 18-21. Sec., Dr. H. Q. Gallupe, 413-E State House, Boston.

MISSOURI: *Examination.* St. Louis, Oct. 20-22. Exec. Sec., Mr. John A. Hailey, State Capitol Bldg., Jefferson City.

MISSISSIPPI: *Endorsement.* Jackson, Dec. 1947. Asst. Sec., State Board of Health, Dr. R. N. Whitfield, Jackson.

MONTANA: Helena, Oct. 6-8. Sec., Dr. O. G. Klein, First National Bank Bldg., Helena.

NEVADA: Carson City, Nov. 3. Sec., Dr. G. H. Ross, 215 N. Carson St., Carson City.

NEW HAMPSHIRE: Concord, Sept. 11-12. Sec., Board of Registration in Medicine, Dr. John S. Wheeler, 107 State House, Concord.

NEW JERSEY: *Examination.* Trenton, Oct. 21-22. Sec., Dr. E. S. Hallinger, 28 W. State St., Trenton.

NEW MEXICO:* Santa Fe, Oct. 13-14. Sec., Dr. LeGrand Ward, 141 E. Palace Ave., Santa Fe.

NEW YORK: *Examination.* Albany, Buffalo, New York and Syracuse, Oct. 6-9, 1947. Sec., Dr. Jacob L. Lochner, Jr., Education Bldg., Albany.

NORTH CAROLINA: *Endorsement.* Raleigh, Oct. 20. Act. Sec., Mrs. L. J. McNeill, 226 Hillsboro St., Raleigh.

NORTH DAKOTA: Grand Forks, Jan. 6-9. Sec., Dr. G. M. Williamson, 4½ S. Third St., Grand Forks.

OKLAHOMA: *Endorsement.* Oklahoma City, Oct. 28-29. Sec., Dr. F. Clinton Gallaher, 813 Braniff Bldg., Oklahoma City.

OREGON:* *Endorsement.* Portland, Oct. 17-18. Exec. Sec., Miss L. M. Conlee, 608 Failing Bldg., Portland.

PENNSYLVANIA: *Examination.* Harrisburg, Jan. 1948. Acting Sec., Board of Medical Education and Licensure, Mrs. M. G. Steiner, 351 Education Bldg., Harrisburg.

RHODE ISLAND:* *Examination.* Providence, Oct. 2-3. Chief, Division of Professional Regulation, 366 State Office Bldg., Providence.

SOUTH CAROLINA: Columbia, Nov. 10-12. Sec., Dr. N. B. Heyward, 1329 Blanding St., Columbia.

SOUTH DAKOTA:* Pierre, Jan. 20. Sec., State Board of Health, Dr. Gilbert Cottam, Capitol Bldg., Pierre.

TEXAS: San Antonio, Nov. 12-14, 1947. Sec., Dr. T. J. Crowe, 918-20 Texas Bank Bldg., Dallas 2.

UTAH: *Reciprocity.* Oct. 8. *Examination.* Salt Lake City, June, 1948. Asst. Dir., Department of Registration, Miss Rena B. Loomis, 324 State Capitol Bldg., Salt Lake City.

VIRGINIA: Richmond, Dec. 4-6. Sec., Dr. K. D. Graves, 30½ Franklin Rd., Roanoke.

WEST VIRGINIA: *Examination.* Charleston, Oct. 2-4. Commissioner, Public Health Council, Dr. N. H. Dyer, State Capitol, Charleston.

WYOMING: *Examination.* Cheyenne, Oct. 6. Sec., Dr. G. M. Anderson, Capitol Bldg., Cheyenne.

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* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

ARIZONA: Sept. 16. Sec., Mr. Francis A. Roy, Science Hall, University of Arizona, Tucson.

ARKANSAS: *Examination.* Little Rock, Oct. 7. Sec., Mr. L. E. Gebauer, 701 Main St., Little Rock.

COLORADO: *Examination.* Denver, Sept. 17-18. Sec., Dr. Esther B. Starks, 1459 Ogden St., Denver.

CONNECTICUT: *Examination.* New Haven, Oct. 11. Exec. Asst., State Board of Healing Arts, Mr. W. G. *Reynolds, 250 Church St., New* Haven 10.

DISTRICT OF COLUMBIA: *Examination.* Washington, Oct. 20-21. Sec., Commission on Licensure, Dr. G. C. Ruhland, 6012 E. Municipal Bldg., Washington.

FLORIDA: *Examination.* Gainesville, Nov. 1. Final date for filing application is Oct. 16. Sec., Dr. W. M. Emmell, University of Florida, Gainesville.

IOWA: Des Moines, Jan. 13, April 13, July 13, Oct. 12. Sec., Dr. Ben H. Peterson, Coe College, Cedar Rapids.

MICHIGAN: *Examination.* Ann Arbor and Detroit, Oct. 10-11. Sec., Miss Eloise LeBeau, 101 N. Walnut St., Lansing.

MINNESOTA: *Examination.* Minneapolis, Oct. 7-8. Sec., Dr. Raymond N. Bieter, 105 M. Hall, University of Minnesota, Minneapolis.

NEBRASKA: *Examination.* Omaha, Oct. 7-8. Dir., Bureau of Examining Boards, Mr. Oscar F. Humble, State Department of Health, Room 1009, State Capitol Bldg., Lincoln 9.

OKLAHOMA: Spring 1948. Sec., Dr. Frank Clinton Gallaher, 813 Braniff Bldg., Oklahoma City.

TENNESSEE: *Examination.* Memphis, Sept. 18-19. Sec., Dr. O. W. Hyman, 874 Union Ave., Memphis.

WISCONSIN: *Examination* Madison, Sept. 27. Final date for filing application is Sept. 20. Sec., Mr. William H. Barber, Watson and Scott Sts., Ripon.

Medical Motion Pictures

FILM REVIEWS

Partial Gastrectomy for Gastric Ulcer. Prepared by R. P. Reynolds, M.D., and C. S. Kennedy, M.D. 16 mm., color, silent, 880 feet (one reel). Showing time thirty minutes. Produced in 1941 by Jam Handy Organization. Procurable from Grace Hospital, 1160 John R. Street, Detroit, Mich.

This film presents a technic of subtotal gastrectomy for gastric ulcer. The author uses a midline incision excising the umbilicus. The pylorus is transected about 2 inches proximal to the pyloric vein, the mucous membrane excised and the pyloric stump inverted with a double row of catgut. This type of procedure is indicated in a duodenal ulcer which interferes with closure of a duodenal stump, but there is no justification for it when the ulcer is located in the midportion of the lesser curvature of the stomach, as was demonstrated early in the film. The cautery was used to excise the stump of stomach adjacent to the crushing clamps, presumably to promote aseptic conditions, but later in the film the author handled the mucous membrane of the stomach and jejunum on numerous occasions with his fingers; although it is impossible to prevent a certain amount of contamination, it should be reduced to an absolute minimum.

Five Gm. of sulfanilamide was placed in the peritoneal cavity after completion of the operation. Interrupted steel wire sutures were used to approximate the fascia. Many surgeons would object to a loop of jejunum as long as 40 cm. proximal to the gastrojejunal anastomosis, even though it was placed anterior to the colon as illustrated.

The author appropriately showed application of towels to the skin edges, thereby emphasizing the importance of segregation of the skin from the operative field. The operative field was properly surrounded with gauze packs to prevent contamination of the rest of the abdominal cavity. The color photography is good.

Ventriculography. Prepared in 1943 by Harold C. Voris, M.D., Loyola University Medical School. 16 mm., color, silent, 800 feet (two reels). Showing time thirty-three minutes. Procurable on loan from Photographic Department, Loyola University Medical School, 706 South Wolcott Street, Chicago 12.

This picture illustrates the various methods of approach in injecting air into the ventricle. The film is entirely satisfactory and well documented and should be of interest especially for teaching purposes. There is no discussion on interpretation of the films obtained by the methods described. The photography is fair to good.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Malpractice: Failure to Examine Eyes Continuously During Tryparsamide Treatments for Syphilis.—The plaintiff sued for damages for total blindness alleged to have resulted from the malpractice of the defendant physician. From a judgment in favor of the defendant, the plaintiff appealed to the United States Court of Appeals for the District of Columbia.

Between November 1942 and February 1943 the plaintiff received seven injections of tryparsamide, an arsenical specific used in the treatment of cerebrospinal syphilis. Prior to these treatments he had received a complete neurologic examination, which included a thorough examination of the eyes. No reason was disclosed why the arsenical treatments should not be given. In February 1943 the plaintiff was referred to the defendant physician for fever therapy treatments with the recommendation that tryparsamide injections be continued. Defendant began administering fever treatments and continued the injections although he did not then make an independent examination of the plaintiff's eyes but relied solely on the abstract record received from Georgetown Hospital, in which the prior examination had been made. At no time thereafter did the defendant examine the plaintiff's eyes, except, as he said, to "look at them" when the patient was in the fever cabinet. After the ninth treatment plaintiff became ill and was removed to the Garfield Hospital, where he was found to be blind. The defendant admitted that he was neither experienced nor expert in the use and administration of tryparsamide and it is conceded that such treatment is extremely dangerous.

The plaintiff first contended that the trial court erred in refusing to instruct the jury that they might consider whether or not the failure of the defendant to give continuous eye examinations during the treatment was negligence. Expert witnesses for both the plaintiff and the defendant testified during the course of the trial. In response to a question as to whether, while a person is being treated for syphilis by fever cabinet therapy and tryparsamide, a careful and close examination or watch on the eyes should be kept, one physician answered "Yes." Another testified that the drug should be used cautiously. A third, who had been called as a witness for the defendant, testified:

> Q. Are there any special precautions to be taken in the use of tryparsamide? A. The eyes should be watched. The patient should be asked and occasionally the fundi should be examined, the eyegrounds should be examined and the fields examined.
>
> Q. And how should they be examined, Doctor? A. We have a machine in the clinic for that, and one of the interns takes the patient, and he has to point out certain points on a dial. That is a routine examination.
>
> Q. So your testimony would be that precautions should be taken and are necessary in the avoidance of possible ocular disturbances in the use of tryparsamide? A. Why certainly.

This evidence, said the court, was sufficient to warrant the submission to the jury, under a proper instruction, of the question as to whether or not the defendant's failure to exercise a continuous examination over the plaintiff's eyes constituted negligence. The trial court erred in refusing so to do.

The plaintiff insisted also that there was sufficient evidence to take the case to the jury on the question of proximate cause. The evidence showed that it was possible that the blindness might have been caused either by the syphilis itself or by the treatment, and that one of the first definite signs that tryparsamide is affecting the eyes is a sensation of light flashing. When this occurs an immediate examination should be made before continuing the use of the drug. The plaintiff testified that he told the nurse, whom the evidence shows defendant had placed in charge of the administration of the treatment, that he had experienced these light flashes. It is true that the nurse denied that he had made such a statement to her, but the jury was entitled to determine the truth as between the two witnesses, and if the jury accepted the plaintiff's statement in this respect, some ground would thereby have been established to justify the jury in reaching the conclusion that the proximate cause of plaintiff's blindness was the continued use of the drug. In this view, said the court, we cannot say that there was a total lack of evidence of proximate cause.

Accordingly the judgment in favor of the defendant was reversed and the cause was remanded for a new trial.—*Winstead v. Hildenbrand, 150 F. (2d) 25 (Dist. of Columbia, 1947).*

Use of Injunction to Restrain Violations of Basic Science Act.—This was an action to restrain the State Board of Chiropractic Examiners from issuing reciprocity certificates to applicants who failed to present a certificate from the Basic Science Examining Board. The defendant's demurrer was sustained, so the relator, prosecuting attorney, appealed to the Supreme Court of Arkansas.

The Basic Science Act fixes penalties for obtaining or attempting to obtain a license to practice any branch of the healing art from any board authorized to issue such license without first presenting to such board a valid basic science certificate. The act also provides (sec. 10808): "Any person who knowingly issues or participates in the issue of a license to practice the healing art or any branch thereof to any person who has not presented to the licensing board a valid certificate from the State Board of Examiners in the Basic Sciences . . . shall be fined not more than five hundred dollars or imprisoned not more than twelve months, or both in the discretion of the judge." The relator alleged that the State Board of Chiropractic Examiners had for many months been intentionally and illegally licensing applicants to practice chiropractic by reciprocity without requiring the applicants to present a certificate of ability in the Basic Sciences as required and that, unless enjoined, it would continue so to violate the terms of the Basic Science Act. The defendant demurred on the ground that the court was without authority to issue an injunction because there was an adequate remedy stated in the act for violations thereof.

The enforcement section of the Basic Science Act (sec. 10810) provides: "The State Board of Examiners of the Basic Sciences and of the various boards authorized to issue licenses to practice the healing art or a branch thereof shall investigate any supposed violation of this act and report to the proper county attorney all the cases that in the judgment of such board warrants prosecution. Every police officer, sheriff and peace officer shall investigate all supposed violations of this act and apprehend and arrest all violators thereof. It shall be the duty of the Attorney General and of the several county attorneys to prosecute violations of this act."

It is manifest, said the Supreme Court, that the Basic Science Act provides a plain and adequate remedy at law for the enforcement of its provisions without any necessity for applying to a court of equity to restrain a violation of its terms. Assuming, without deciding, that the State Board of Chiropractic Examiners is in error in licensing by reciprocity applicants from other states without first requiring presentation to it by such applicants of a certificate from the Basic Science Board, we think relator should have pursued the enforcement remedy provided by the Act. It is well settled, the court continued, that equity will not intervene by injunction to restrain acts that are merely criminal although "this does not preclude injunctive relief against the commission of criminal acts which cause irreparable injury to the complainant's property or pecuniary rights, even though the acts complained of are committed by public officers." Here, however, said the court, there is no allegation that the relator's property or pecuniary rights are invaded or threatened. This is a simple action to enjoin an alleged criminal violation of the Basic Science Act, for which violation the act itself prescribes serious penalties.

Being a suit to enjoin the defendant board from the alleged criminal violation of the Basic Science Act, we think, the court concluded, that the trial court was without jurisdiction and correctly sustained the demurrer to the complaint. The judgment in favor of the defendants was accordingly affirmed.—*State ex rel Robinson v. Crow, 199 S. W. (2d) 323 (Ark., 1947).*

Current Medical Literature

AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

American Journal of Medicine, New York

2:549-666 (June) 1947

The Thymus and Myasthenia Gravis. A McGehee Harvey.—p. 549.
Antibacterial Precipitating Antibodies in Group A Hemolytic Streptococcus Sore Throat. L. A. Rantz and Elizabeth Randall.—p. 551.
Auricular Electrogram in Parasternal Leads N W. Brown and G. M. Ellis.—p. 568.
*Investigations of Cerebrospinal Fluid in Cases of Rheumatoid Arthritis. F. Sundelin.—p. 579.
Sulfadiazine Sensitivity with Demonstrable Skin Sensitizing Antibody in Serum. W. B. Sherman and R. A Cooke.—p. 588.
Fungous Diseases Encountered in General Hospital Practice. D. T. Smith.—p. 594.
Rheumatic Fever in Perspective of Public Health. H. S. Mustard. —p. 609.
Role of Medical Social Worker in Management and Control of Rheumatic Fever and Rheumatic Heart Disease. Grace White.—p. 618.

Cerebrospinal Fluid in Rheumatoid Arthritis.—According to Sundelin the symptomatology of rheumatoid arthritis includes a large number of neurologic symptoms which indicate that both the central and autonomic nervous systems are involved in this disease. The spinal fluid was examined in 141 patients with rheumatoid arthritis, of whom 58 exhibited a protein content that was pathologic in one way or another, 15 gave a pathologic colloidal gold reaction and 7 showed an increased spinal fluid cell count. Altogether 66 (46.8 per cent) were found to have spinal fluids which were pathologically altered. Although the presence or absence of such abnormalities could not be correlated with the presence or absence of neurologic manifestations, the changes noted may be an indication of nervous system involvement in rheumatoid arthritis.

American J. Obstetrics and Gynecology, St. Louis

53:901-1084 (June) 1947. Partial Index

Uterine Accommodation of Products of Conception: Physiologic Considerations. S. R. M. Reynolds.—p. 901
*Problem of Repeat Cesarean Section—Preliminary Study. C. T. O'Connor.—p. 914.
Fetal Mortality in Cesarean Section. H S. Acken Jr.—p. 927.
Vaginal Hysterectomy with Radical Advancement of the Uterosacral Ligaments for Pelvic Floor Hernioplasty in Cases Showing Third Degree Uterine Prolapse. W. H. Veenboer and H. P. Kooistra. —p. 936.
*Carcinoma of the Cervix. W. P. Given.—p. 947.
Voorhees Bag: Analysis of Use in 164 Cases. Augusta Webster.—p. 957.
Analytical Survey of Eclampsia. J. B. Bernstine and L. N. Prince. —p. 972.
Scopolamine and Apomorphine in Labor. B. B. Hershenson and E. R. Brubaker.—p. 980.
Surface Tension as Factor in Resistance of Neonatal Lungs to Aeration. P. Gruenwald.—p. 996.
Analysis of Therapeutic Abortions, Bellevue Hospital 1935-1945. I. K. Perlmutter.—p. 1008.
Late Postpartum Bleeding: Method of Prevention. H. W. Erving and H. A. Power.—p. 1019.
Statistical Study of Cases of Placenta Previa Occurring in Jewish Hospital from 1935 to 1946. I. Daichman and W. Pomerance.—p. 1024.
*Effect of Diphtheria on Pregnancy: Report of 5 Cases. D. Robinson, P. Hardy and L. M. Hellman.—p. 1029.
Primary Carcinoma of the Fallopian Tube. E. A. Edwards and R. A. Beebe.—p. 1049.

Repeat Cesarean Section.—According to O'Connor the experience of individuals or of individual hospitals reveals that the mortality of repeat classic cesarean sections has been in the past 3.2 per cent. This risk probably can be reduced at the present time to about 1.5 per cent. A review of similar experiences with the low operation reveals a mortality of slightly over 1 per cent. In both procedures second cesareans bulk large, with a much smaller number of third cesareans and practically none beyond this. It is highly probable that the danger would have been greater than 3.2 per cent in classic and 1.2 per cent in low sections, were a larger number of fourth and fifth cesareans recorded. The remote dangers of rupture of the uterine scar and intestinal adhesions are great after the classic section and exist to a much less degree after the low section. A conservative type of section with sterilization removes the dangers of rupture of the scar and risk inherent in another future section but does not diminish the immediate mortality due to the procedure or the immediate and remote dangers from adhesions. Evidence is presented that elective cesarean hysterectomy is simple to perform, causes less blood loss, has a smoother convalescence and shows less morbidity than conservative repeat sections with or without tubal sterilization and in addition eliminates future dangers from a useless organ, the uterus. The procedure should be given much more consideration as an elective procedure at repeat sections and should often be performed on a patient over 40 years of age, in the presence of poor scars, when the uterus does not contract perfectly, in the presence of adhesions, after the third or more classic section and on patients who are subject to severe heart disease, kidney disease or tuberculosis.

Carcinoma of the Cervix.—*Given* presents a statistical analysis of 212 patients with cancer of the cervix uteri observed between 1933 and 1944. Sixty-five per cent of this number were classed as stage I and II and 35 per cent as stage III and IV. Of the 115 patients seen from 1933 through 1940, 49, or 42.5 per cent, survived for five years or more. The four, three, two and one year survival rates for the 97 patients seen from 1941 through 1944 are not appreciably different from the rates over the first period despite the fact that in 1940 radiation factors and technic were altered. There were about twice as many reactions in patients treated before 1940 as in those treated after 1940. This reduction in radiation complications is attributed to improved technic in radiation therapy.

Effect of Diphtheria on Pregnancy.—Robinson and his associates observed 4 patients with antepartum diphtheria. These women, with a fifth patient who was delivered in the Johns Hopkins Hospital in 1907, comprise the cases reviewed in this paper. There is no indication from these cases that adequately treated diphtheria increases the incidence of abortion or premature labor. No evidence was found in the literature nor was any obtained in these cases that might indicate the passage of diphtheria toxin across the placental barrier.

American Journal of Public Health, New York

37:641-802 (June) 1947. Partial Index

What Is Health Education? A Symposium. W. W. Bauer and others. —p. 641.
Health Goals for Housing. C. E. A. Winslow.—p. 653.
Control of Dengue in Hawaii. C. L. Wilbar Jr.—p. 663.
Sudden Deaths of Infants Allegedly Due to Mechanical Suffocation. J. Werne and Irene Garrow.—p. 675.
Appraisal of Nutritional Status: Some Recent Observations on Iron and Lactobacillus Casei Factor (Vitamin M, Folic Acid). W. J. Darby. —p. 688.
*Are Frozen Foods a Public Health Problem? G. A. Fitzgerald.—p. 695.
Current Trends in Nutrition Research in Canned Foods. R. W. Pilcher and B. S. Clark.—p. 702.
Baltimore's Community Rat Control Program. J. T. Emlen Jr.—p. 721.
Determination of Filth and Extraneous Matter in Dairy Products. J. O. Clarke.—p. 728.

Frozen Foods as a Public Health Problem.—According to Fitzgerald frozen foods have been remarkably free from suspicion of being health hazards both as to enterotoxic food poisoning and as to infectious diseases. An acid forming streptococcus appears to be an active factor during spoilage, souring foods beyond edibility before enterotoxins can be elaborated. There is a possibility that pathogenic organisms may survive the freezing storage treatment and retain sufficient viability to cause infectious diseases. These could be a source of infection in frozen foods of the very best quality because the souring would not be present to warn the user. Frozen fruits and vegetables which may be served in raw salads could very well be the source of infections. These can be controlled only through careful sanitary procedures in factories. Laboratory methods of detecting the incidence of toxigenic or pathogenic strains of organisms are at present inadequate, and frozen foods may momentarily be implicated as health hazards. The industry has every reason to support thorough research designed to develop control technics.

Annals of Allergy, Minneapolis

5:193-276 (May-June) 1947

*Use of Intravenous Ethyl Alcohol in Treatment of Status Asthmaticus. E. A. Brown.—p. 193.
*Continuous Intravenous Aminophylline Therapy in Status Asthmaticus. R. J. Goodall and L. Unger.—p. 196.
Cutaneous Reaction Units. R. P. Wodehouse.—p. 203.
Treatment of Insulin Allergy. S. S. Burden.—p. 209.
Evaluation of Intramuscular Injections of Specific Extracts in Treatment of Acute Poison Ivy Dermatitis. J. B. Howell.—p. 219.
Food Allergy in Dogs. R. Povar.—p. 224.
Chemical and Immunologic Basis of Oral Pollen Propeptan Therapy in Hay Fever. E. Urbach, G. Jaggard and D. W. Crisman.—p. 225.
Asthma Due to Odor of Urine, Feces and Sweat. H. C. Jamieson. —p. 234.
Reagins: Preliminary Report on Experimental Evidence in Support of New Theory of Their Nature. H. Miller and D. H. Campbell. —p. 236.
Some Helpful Hints for Maintaining Efficiency of Aerosol Nebulizers. A. Seltzer.—p. 234.

Intravenous Ethyl Alcohol in Status Asthmaticus.—Brown says that a 5 per cent ethyl alcohol solution in physiologic 5 per cent glucose saline solution with or without epinephrine 1 : 1,000 (0.3-1.0 cc.), given intravenously at the rate of 80 to 100 drops per minute, effectively relieved severe bronchial asthma in 5 of 6 patients who did not respond to the usual medications given by the oral, subcutaneous and intravenous methods. Two of the patients responded similarly on two successive hospital admissions. No ill effects were observed.

Continuous Intravenous Aminophylline Therapy in Status Asthmaticus.—Goodall and Unger completely or partially eliminated status asthmaticus in 9 of 10 patients by a continuous intravenous administration of aminophylline. Relapse may or may not occur when the procedure is discontinued. Dosage consisted of up to 2 or even 3 Gm. of aminophylline dissolved in 2,000 cc. of 5 per cent dextrose in distilled water or of isotonic solution of sodium chloride alternating; the solution was given at the rate of 28 drops a minute. Large dosages of the drug should be used initially and very gradually reduced as the asthmatic symptoms subside. Aminophylline can be given in dosages up to 3 Gm. in twenty-four hours without undue danger to patients with severe bronchial asthma. Continuous intravenous aminophylline therapy is strongly recommended for most severe types of status asthmaticus, the types which have resisted all other kinds of therapy.

Annals of Internal Medicine, Lancaster, Pa.

26:813-968 (June) 1947

Liver Function in Hepatitis. C. J. Watson and F. W. Hoffbauer. —p. 813.
*Clinical Manifestations of Sickle Cell Anemia. V. Grover.—p. 843.
*Histamine in Treatment of Peptic Ulcer. B. M. Bernstein.—p. 852.
Continuous Fever of Intestinal Origin. B. B. Crohn and H. Yarnis. —p. 858.
Is There an Intrinsic Asthma? G. L. Waldbott.—p. 863.
Dissecting Aneurysm of the Aorta: Presentation of 15 Cases and Review of Recent Literature. S. R. Bauersfeld.—p. 873.
Psychogenic Rheumatism. E. Weiss.—p. 890.
Study of Mitral Stenosis in Patients who Survived Age of 50. L. A. Baker and D. Musgrave.—p. [illegible].

Clinical Manifestations of Sickle Cell Anemia.—Grover lists the clinical manifestations of 48 cases of active sickle cell anemia. Patients with sicklemia without active symptoms have been disregarded. The previous concepts of the clinical features of this disease are confirmed. but particular attention is directed to the frequent occurrence of cardiac enlargement, presence of diastolic and systolic murmurs of the heart, prolongation of the PR interval, x-ray changes in the osseous system, rapid and obvious changes in the size of the liver and spleen, neuropsychiatric signs and symptoms, especially mental deficiency, and abdominal crises. Two unusual manifestations were the demonstration by esophagram of auricular enlargement in 2 cases and the relief of priapism by roentgen therapy.

Histamine in Peptic Ulcer.—Bernstein points out that procedures which have been recommended for the treatment of gastric ulcer are based on the assumption that acidity interferes with ulcer healing, and therefore a way must be found to depress or remove the gastric acidity permanently. He has gained the impression that, whereas the acid pepsin factor may be important, there appears to be no relationship between the maintenance of gastric acidity and the disappearance of either the symptoms or the anatomic defect or both. In contradiction to the implied dictum "neutralization of acid is necessary for the treatment of peptic ulcer" the author has used histamine, a potent acid stimulating, vasodilating agent. An average of twenty daily injections of 0.2 mg. of histamine phosphate were given to 75 ulcer patients. Except in the few instances in which tincture of belladonna also was used, no other medication was given. No untoward reactions were seen, except occasionally flushing and temporary headaches. In 50, or two thirds, of the patients complete relief from pain was obtained after the fourth injection, and over 80 per cent of the patients were relieved after less than ten injections. Five patients did not respond, 1 developed a fatal perforation and hemorrhage during treatment and another had a perforation soon after the histamine injections were begun. The deformities of duodenal and marginal ulcers showed great improvement under histamine treatment in some cases, and gastric ulcer was seen to disappear quickly. Twenty-six patients were protected against an anticipated recurrence by seasonal prophylactic injections.

Annals of Surgery, Philadelphia

125:673-808 (June) 1947

*Carcinoma of Breast: Study of 298 Consecutive Cases. G. G. Finney, W. C. Merkel and D. B. Miller.—p. 673.
*Carcinoma of Breast: Results of Combined Treatment with Surgery and Roentgen Rays. S. F. Marshall and H. F. Hare.—p. 688.
*Treatment of Cancer of Breast in Premenopausal Patients with Radical Amputation and Bilateral Oophorectomy. G. W. Horsley.—p. 703.
Surgical Treatment of Spontaneous Cerebrospinal Rhinorrhea. C. C. Coleman and C. E. Troland.—p. 718.
*Tetraethyl Ammonium as Adjunct in Treatment of Peripheral Vascular Disease and Other Painful States. F. A. Coller, K. N. Campbell, R. E. L. Berry and others.—p. 729.
Wounds of Liver. J. D. Martin Jr.—p. 756.
Wound Disruption and Early Ambulation. J. C. Burch and C. F. Bradley.—p. 768.
Wound Closure Without Use of Grafts. T. O. Otto.—p. 778.
Bilateral Cutaneous Ureterostomy Eighteen Years After Ureterosigmoidostomy for Exstrophy of the Bladder. E. Burns, W. E. Kittredge and J. Hyman.—p. 788.

Carcinoma of Breast.—Finney and his co-workers review 298 cases of cancer of the breast in which operation was performed during the fifteen year period from 1930 to 1945. All patients were treated surgically with 281 radical mastectomies and 17 simple mastectomies by four surgeons with an operative mortality of 1 per cent. Only 19 patients received either preoperative or postoperative radiation to the tumor site, while 7 patients of the premenopausal group were sterilized following radical mastectomy. Endocrine therapy has been used in only 3 cases, in all of which there were metastatic lesions. Of the 150 patients who did not die of cancer metastases, 70 per cent showed no metastatic lesions in their axillary nodes at the time of operation, while 30 per cent showed metastases. In this series the survival rates were 77 per cent after three years, 49 per cent after five years, 19 per cent after ten years and 4 per cent after fifteen years. Radical operation before metastasis has occurred in the axillary nodes gives the best prognosis.

Combined Surgery and Roentgen Treatment in Carcinoma of Breast.—Marshall and Hare say that radical surgical removal of breast carcinoma followed by intensive irradiation appears to improve statistical results in cancer of the breast and offers the best possibility for prolongation of life. In a series of 238 patients who received this type of treatment, 52 per cent were alive after five years or longer without evidence of recurrent tumor. The incidence of local recurrent tumors is materially reduced, there being only 8 per cent of such recurrences noted in this series. Radiation therapy given in large amounts by the divided dose method produced no serious complications. Failure results from spread of disease to distant areas prior to institution of treatment.

Radical Amputation and Bilateral Oophorectomy for Cancer of Breast in Premenopausal Patients.—Horsley reviews the recent literature on the influence of female hormone on breast cancer and the results obtained in breast cancer patients at St. Elizabeth's Hospital in Richmond, Va. Particular attention is given to the results obtained on 39 cancer of the breast patients in the premenopausal stage treated with radical amputation and oophorectomy. In this group 76.9 per cent lived without recurrence three and five years after operation. By comparison, patients who had undergone amputation but not oophorectomy had a five year cure rate of only 43.5 per cent. These patients were mostly of the postmenopausal period.

Tetraethyl Ammonium in Peripheral Vascular Disease.—Coller and his associates point out that the demonstration by Acheson and Moe that in animals the tetraethyl ammonium ion will block transmission of nerve impulses through autonomic ganglions led to investigation of the effects of this drug as a diagnostic and therapeutic agent. Administration of tetraethyl ammonium for the production of autonomic blockade proved of value in diminishing or relieving the severity of the pain of causalgia, posttraumatic painful states, herpes zoster, Buerger's disease and thrombophlebitis. The improvement following such therapy has been sustained in certain cases. The drug has proved to be a satisfactory implement for clinical investigation and therapy. Although tetraethyl ammonium injected intravenously in dosages of 500 mg. or less has not been accompanied with serious toxic effects, hypertensive patients, particularly those in whom a neurogenic component of the hypertension has been identified or suspected, should have great care exercised during administration. Precipitous drops in blood pressure have been encountered, associated with nausea, vomiting, sweating, pallor and temporary peripheral circulatory collapse. Nonhypertensive patients with an unduly labile sympathetic nervous system should also have the drug administered with caution. Elderly patients do not tolerate tetraethyl ammonium well. They should be given small doses, gradually working up to 500 mg. Some patients treated daily over a long period develop a mild myasthenia and lassitude, which disappears with cessation of administration of the drug. In small patients a 500 mg. intravenous injection may be followed by fasciculation of muscles. This is probably an evidence of overdosage. Large intramuscular doses in obese patients may produce the same effect, which may last for several hours. No ill effects have been noted from this pheuomenon.

Archives of Dermatology and Syphilology, Chicago

55:741-888 (June) 1947

Penicillin in Treatment of Experimental Syphilis of Rabbits: I. Therapeutic Activity of Penicillin in Single and Multiple Doses in Isotonic Solution of Sodium Chloride and Peanut Oil-Beeswax by Intramuscular Injection. J. A. Kolmer.—p. 741.
Acanthosis Nigricans Juvenilis Associated with Obesity: Report of a Case; Observations on Endocrine Dysfunction in Benign Acanthosis Nigricans. S. S. Robinson and S. Tasker.—p. 749.
Madura Foot (Mycetoma): First Report from Isthmus of Panama. C. Calero.—p. 761.
*Pemphigus Vulgaris: Study of Blood Picture. A. W. Grace.—p. 772.
Nerve Lesions of Leprosy: V. Pardo-Castello, F. R. Tiant and R. Piñeyro.—p. 783.
*Topical Penicillin Therapy: II. Principles of Local Therapy with Penicillin Ointment Mixtures. L. Goldman, R. R. Suskind and F. Friend.—p. 793.
Effects of Glycerite of Hydrogen Peroxide on Infections of Skin and Mucous Membrane. F. M. Thurmon and E. A. Brown.—p. 801.
*Eosinophilic Granuloma of Bone with Cutaneous Manifestations: Report of Case. A. C. Curtis and E. P. Cawley.—p. 810.
Pachyonychia Congenita: Report of 2 Cases and Studies on Therapy. Carroll S. Wright and J. P. Guequirre.—p. 819.
Longitudinal Grooving of Nails Caused by Synovial Lesions. C. B. Anderson.—p. 828.

Blood Picture in Pemphigus Vulgaris.—Grace reviews the results of blood studies made on 11 persons over periods ranging from twelve to one hundred and seventy-six days before death from pemphigus vulgaris. The effect was noted of clinical remission and relapse, impending death and increase of body temperature and administration of sulfanilamide. The proportion of eosinophils diminishes with deterioration of the general condition, and when a nonpruritic patient becomes sufficiently debilitated the eosinophil count may fall to zero. In the last two weeks of life the eosinophils do not exceed 6 per cent and are usually less; on the day of death they are few or absent. The terminal stages of pemphigus are associated with a relative and at times considerable monocytosis. This increase is probably a reflection of the role of the monocyte as a scavenger of particulate materials and bacteria. No relation exists between the degree of increase of monocytes and clinical remission or relapse, the presence of impending death or the administration of sulfanilamide. Monocytosis is therefore an even less sensitive index of the general condition in pemphigus vulgaris than is eosinophilia. The relative proportion of lymphocytes is unaffected by changes in the clinical picture. The red cell count is diminished. The blood picture is practically identical with that of a generalized infection. Leukocytosis, however, does not arise from an increase in the cells of the polymorphonuclear series; it is produced by an increase in the total number of each type of leukocyte present normally in the circulating blood. The absence of neutrophilia may be accounted for on the ground that the virus of pemphigus, in common with most viruses, is not a pyogenic agent.

Local Therapy with Penicillin Ointment Mixtures.—Goldman and his associates say that their experience with more than 400 cases shows that, when properly prepared and rationally employed, penicillin ointment mixtures are of value in dermatologic therapy. With penicillin ointments in their present state of development, certain factors must be considered in their preparation, storing, dispensing and application to insure maximum therapeutic effectiveness. Stability depends on the absence of water in the ointment, the use of a relatively stable penicillin salt such as calcium penicillin rather than sodium penicillin and the maintenance of sterility during preparation. The temperature of the mixture should not exceed 15 C. A concentration of 500 to 1,000 units of calcium penicillin per gram of ointment is preferable in most cases. The authors have used concentrations as high as 20,000 units per gram and produced no irritation and only rarely increase in sensitization. Among the conditions for which penicillin is regarded as definitely indicated the authors list impetigo, superficial impetiginized dermatitis, superficial pustular folliculitis, dermatophytosis with secondary pyogenic infection, superficial wounds, burns, biopsy areas, cyst cavities and the like. There are conditions for which penicillin is of possible benefit, such as infectious eczematoid dermatitis, pyodermas of the deeper type, ulcers, infectious exanthems, seborrheic dermatitis and sycosis barbae. Penicillin is of no value for deep infections in which the ointment cannot penetrate the infected area (carbunculosis or deep cellulitis), psoriasis, lupus erythematosus, pemphigus, dermatitis herpetiformis, "stasis" eczematoid dermatitis, acne vulgaris and herpes labialis. Eczematous contact reactions and other forms of reactions of the skin and mucous membrane are seen following topical penicillin therapy. The frequency and severity of these reactions will determine whether topical penicillin therapy in selected dermatoses is to be discarded in favor of equally effective nonsensitizing agents. If it is established that topical penicillin therapy also sensitizes a person so that adequate parenteral penicillin therapy cannot be given to that person in the future, topical penicillin therapy may have to be discarded.

Eosinophilic Granuloma of Bone with Cutaneous Manifestations.—Curtis and Cawley think that Letterer-Siwe disease, Hand-Schüller-Christian disease and eosinophilic granuloma of bone merit classification as closely allied manifestations of a basic disease varying chiefly in severity the exact nature of which is not known. Cutaneous lesions are of frequent occurrence with the first two but have not been described in conjunction with the last. The authors report observations on a girl aged 16 months who was referred to the dermatology clinic of the University of Michigan Hospital because of a cutaneous eruption. X-ray examination of the skull, chest, long bones and spine demonstrated a destructive lesion involving the axillary portion of the second rib on the right side, with an overlying swelling of the soft tissue in addition to a similar destructive lesion in the left ilium. A similar lesion subsequently developed in the right mastoid. Following roentgen therapy to the lesions of the bone and to the cutaneous eruption there was complete but gradual healing.

Archives of Ophthalmology, Chicago

37:701-824 (June) 1947

*Symptomatology of Subdural Hematoma in Infants and in Adults: Comparative Study, with Particular Reference to the Ocular Signs; an Observation Concerning Pathogenesis of Subdural Hematoma. C. D. Govan Jr. and F. B. Walsh.—p. 701.
Choroideremia: Report of a Case. B. Esterman.—p. 716.
Myopia Inversa. A. Fuchs.—p. 722.
A Neglected Cause of Secondary Glaucoma in Eyes in Which the Lens Is Absent or Subluxated. P. A. Chandler and C. C. Johnson.—p. 740.
Minor Anomalies in Position of the Eyelashes. F. J. Bloch.—p. 772.

Symptomatology of Subdural Hematoma in Infants and Adults.—Govan and Walsh report observations on subdural hematoma in 37 infants and 54 adults. Certain anatomic observations are pointed out which may explain the differences in manifestations in the two age groups. They were impressed by the rarity of subdural hematoma in the age group from 2 to 20 years, the regularity with which hemorrhage occurred bilaterally in infants and unilaterally in adults, the regularity with which blood (or xanthochromia) was found in the spinal fluid of infants and its almost uniform absence in adults, and the frequent absence of a history of trauma in infants and the almost invariable history of trauma in the adults. Gross examination revealed an important anatomic difference between the supporting structures of the pial veins of the infant and those of the adult. In the infant the dura and the delicate arachnoid membrane are easily separated, and when the dura is retracted toward the midline several large pial veins are seen entering the longitudinal sinus. These vessels are short, nontortuous and without support. They appear to lie free in the subdural space. In sharp contrast, the dura and the arachnoid membrane of the adult are firmly bound together in the region of the longitudinal sinus. This attachment of the arachnoid to the dura is formed by masses of fibrous tissue forming the base of arachnoid villi (pacchionian granulations). It is plausible to think that in the adult, on account of the presence of these fibrous attachments, which must protect the pial veins entering the longitudinal sinus, a severer trauma would be required to rupture the vessels. The usual absence of a history of trauma in infants may perhaps be explained on the ground that only slight trauma might be required to rupture the veins in the infant on account of the freer mobility of the brain. The freer mobility of the brain might also explain why the subdural hematoma in the infant is almost invariably bilateral.

Archives of Pathology, Chicago

43:439-540 (May) 1947

Lindau-von Hippel Disease with Hemangioblastoma of Spinal Cord and Syringomyelia. T. D. Kinney and P. J. Fitzgerald.—p. 439.
Role of Lymphatic Vessels in Transmission of Lipase in Disseminated Pancreatic Fat Necrosis. T. Tayloe Perry III.—p. 456.
Studies of Thermal Injury: IV. Exploration of Casualty Producing Attributes of Conflagrations; Local and Systemic Effects of General Cutaneous Exposure to Excessive Circumambient (Air) and Circumradiant Heat of Varying Duration and Intensity. A. R. Moritz, F. C. Henriques Jr., F. R. Dutra and J. R. Weisiger.—p. 466.
Id.: V. Predictability and Significance of Thermally Induced Rate Processes Leading to Irreversible Epidermal Injury. F. C. Henriques Jr.—p. 489.
Nephrotoxic Action of dl-Serine in the Rat: I. Localization of Renal Damage, Phosphatase Activity and Influence of Age, Sex, Time and Dose. M. Wachstein.—p. 503.
Id.: II. Protective Action of Various Amino Acids and Some other Compounds. M. Wachstein.—p. 515.
*Fibromyosis Uteri: Endometrial Type. J. H. Hill.—p. 527.

Fibromyosis Uteri: Endometrial Type.—After studying uterine fibromyosis of endometrial type as presented by a woman aged 46 and cases previously reported, Hill declares he does not believe that these cases should be called instances of endometriosis, as done by Goodall, because the stromal cell growth does not contain glands. He employs Frank's term "fibromyosis" to describe the growth observed in the present case, adding the phrase "endometrial type" to indicate the specific endometrial stroma type of fibrogenic growth which characterizes this condition. While the stromal cells are actively reticulogenic and form only collagen about the intrinsic blood vessels, the author thinks the "fibro-" is justified in view of the intimate connection known to exist between the argyrophilic reticulum and collagen. McDonald and his associates concluded that endometrial stroma sarcoma was to be viewed as a variety of fibrosarcoma, since the growth sometimes forms collagen. The "myosis" is necessary to indicate the associated hyperplasia of smooth muscle which accompanies the stromal cell masses. Since the stromal cell of the endometrium is unique, he feels that the qualifying phrase "endometrial type" is required to indicate the specific cell type comprising the fibrogenic tissue.

Archives of Surgery, Chicago

54:483-612 (May) 1947

*Bilateral Lobectomy for Bilateral Bronchiectasis. J. D. Bisgard and S. A. Swenson Jr.—p. 483.
Seamless Prosthetic Hands: Technic of Fabrication. C. D. Clarke, F. B. Weinberg and G. C. Blevins.—p. 491.
Thoracicoabdominal Approach to Upper Portion of Abdomen and Upper Pole of Kidney. F. R. Harper.—p. 517.
Functional Survival of Autogenous and Homogenous Transplants of Blood Vessels: Experimental Study. C. S. Williamson and F. C. Mann.—p. 529.
Blood Iodine Studies: VIII. Blood Iodine in Nonthyroid Disease. G. M. Curtis and M. B. Fertman.—p. 541.
Congenital Hypertrophic Pyloric Stenosis. C. A. Nafe.—p. 555.
Progress in Orthopedic Surgery for 1945: XIII. Neuromuscular Disorders Exclusive of Poliomyelitis. W. M. Phelps.—p. 566.
Id.: XIV. Fractures. W. G. Stuck, R. H. Alldredge, D. H. O'Donoghue and C. R. Rountree.—p. 571.

Bilateral Lobectomy for Bronchiectasis.—Bisgard and Swenson report 4 cases of bilateral bronchiectasis cured by bilateral lobectomy. In all cases the lower lobes of both lungs were removed, and in 1 case the middle lobe of the right lung also was excised. All but 1 of the patients are entirely free from symptoms. In this one there is some residual cough and sputum because the middle lobe of the right lung and the lingua of the upper lobe of the left lung are bronchiectatic, and the disease remains because it was not recognized prior to and at operation. Eight operations and 9 lobectomies were performed in the 4 cases—all by intralobar dissection and the individual ligation technic, with intratracheal cyclopropane anesthesia and frequent intratracheal aspirations. In 2 cases bronchopleural fistula with empyema developed, in each case after the first stage of operation, and in both cases the fistula closed spontaneously after drainage of the empyema. There were no deaths. In all cases not only good health but normal lives are being enjoyed, which the cough previously made impossible.

Arizona Medicine, Phoenix

4:1-96 (May) 1947

Management of Intestinal Obstructions. C. F. Dixon and R. E. Weismann.—p. 25.
"The Diagnosis and Treatment of Herniation of the Intervertebral Disk." J. Martin.—p. 29.
Protruded Intervertebral Disk: Diagnosis, Treatment and Results. J. Greenwood Jr.—p. 33.
Studies of Syphilis Serology: I. pH Control and Effect on Sensitivity of Flocculation Precipitation Tests. E. L. Breazeale and L. F. Pierve.—p. 36.
Early Ambulation—Post Partum. C. B. Warrenburg.—p. 40.

Arkansas Medical Society Journal, Fort Smith

44:1-42 (June) 1947

President's Address. H. K. Wade.—p. 1.
Student Health Service at University of Arkansas. F. Richardson.—p. 4.

44:43-68 (July) 1947

*New Drugs in Treatment of Malaria. H. Packer.—p. 43.
Fundamental Motivations of American Medical Association.—p. 49.
The Old Folks. R. B. Robins.—p. 55.
Photographs as Medical Records. H. S. Stern.—p. 56.

New Drugs in Malaria.—Packer says that during World War II, following the loss of the quinine supply of the Dutch East Indies, an extensive malaria research program was carried out. During the course of these studies over 14,000 drugs were tested. In the field type suppression, as in the suppression of the acute clinical attack, chloroquine and paludrine will undoubtedly supplant atabrine (quinacrine). These drugs have an advantage over atabrine in that they are effective when given once a week, whereas atabrine must be given almost daily. The great strides that have been made in the field of malaria chemotherapy in recent years under the pressure of the urgent wartime need for knowledge in this field will continue to be a valuable asset to the practicing physician. Physicians will be called on to treat relapsing vivax malaria acquired in the Southwest Pacific and in the Mediterranean areas for some time to come, in addition to indigenous cases. Mosquito control as the fundamental malaria control procedure is still needed.

Endocrinology, Springfield, Ill.

40:299-359 (May) 1947

*Effect of Goitrogenic and Other Reducing Agents on Inactivated Thyrotropic Hormone Extract. A. Albert, R. W Rawson, Priscilla Merrill and others.—p. 299.
*Augmentation of Thyrotropic Potency by Goitrogens. A. Albert, R. W. Rawson, Priscilla Merrill and others.—p. 303.
Gonadal Hormones and Contractility in Vitro of the Vas Deferens of the Dog. J. R. Valle and A. Porto.—p. 308.
Motility and Pharmacologic Reactivity of Genitals of Vitamin E Deficient Rats. J. R. Valle and L. C. U. Junqueira—p. 316.
Rapid Hyperemia Pregnancy Test in Equids. Quantitative Evaluation at Different Time Intervals. B. Zondek and F Sulman.—p. 322.
Studies on Endometrial Alkaline Phosphatase During Human Menstrual Cycle and in the Hormone-Treated Monkey. W. B. Atkinson and E. T. Engle.—p. 327.
Thyroxine-like Action of Elemental Iodine in Rat and Chick. S. Dvoskin. —p. 334.
Effect of Insulin of the Tolerance of Normal Male Rats to Overfeeding of a High Carbohydrate Diet. D. J. Ingle and J. E. Nezamis.—p. 353.

Effect of Goitrogenic and Other Reducing Agents on Inactivated Thyrotropic Hormone.—Albert and his associates showed that treatment of a thyroid stimulating hormone extract with elementary iodine resulted in precipitation of most of the proteins of the extract. The brown iodinated precipitate was observed to have lost 95 to 100 per cent of its original thyrotropic activity. When the precipitate was triturated in an excess of acetone, 60 per cent of the iodine was removed, leaving a buff-colored protein residue containing the original thyrotropic potency. The conversion of inactivated hormonal material to activity has been accomplished in other ways. The authors demonstrate that the loss of thyrotropic activity occurring during exposure of a pituitary extract to iodine was restored in varying degree by treatment of the iodinated hormonal material with various goitrogenic and nongoitrogenic reducing compounds.

Augmentation of Thyrotropic Potency by Goitrogens.—Albert and his co-workers demonstrated that exposure of a pituitary extract to various goitrogenic compounds resulted in augmentation of its thyrotropic activity The augmenting effect was not abolished when the goitrogens were presumably removed from the hormonal material prior to bioassay.

Georgia Medical Association Journal, Atlanta

36:185-216 (May) 1947

Medicine: Its Problems and Their Solutions R. Hill Chaney.—p. 185.
Surgical Management of Ulcerative Colitis: Report of Cases. L. Grove and E. Rasmussen.—p. 191.
Acute Obstructions of Colon. W. G. Whitaker Jr.—p. 196.
Early Postoperative Ambulation. E. H. Estes.—p. 200.
Hospital Extension Service in Georgia. T. Talbot Blalock.—p. 204.

36:217-250 (June) 1947

Thrombophlebitis and Phlebothrombosis, with Special Reference to Dicumarol and Heparin Treatment. J. L. Clements Jr.—p. 217.
Congenital Anomalies of Lower Gastrointestinal Tract Causing Obstruction. L. H. Bishop Jr.—p. 223.
Vagotomy in Treatment of Peptic Ulcer. C. E. Todd Jr.—p. 228.
Cardiac-Coronary Circulation of 18 Millimeter Human. W. M. Watkins. p. 231.

Hawaii Medical Journal, Honolulu

6:301-374 (May-June) 1947

*Histoplasmosis in Man. F. K. Lam and S. Price.—p. 313.
Breast Lesions, with Particular Reference to Cystic Disease, Fibroadenoma, Papilloma and Carcinoma. I. L. Tilden.—p. 316.
Tumors of Breast. J. E. Strode.—p. 321.
Racial Incidence of Prostatism in Hawaii: Preliminary Report. K. B. Conger.—p. 324.
Role of Adduction Insufficiency in Reading Problems. P. M. Corboy. —p. 325.

Histoplasmosis in Man.—Lam and Price report that a man aged 45, of Portuguese extraction, entered the hospital complaining of "tightness" in his jaw. His condition gradually became worse. From the fifth hospital day the temperature rose slowly until the seventh day; it was 105 F. when he died with pulmonary edema. At necropsy diagnosis of histoplasmosis was made because the causative organism was discovered in the tissues. The disease was acquired in the Territory of Hawaii. This is believed to be the first case of histoplasmosis diagnosed in Hawaii.

Journal of Experimental Medicine, New York

86:1-76 (July) 1947

Morphologic and Other Characteristics of Agent of Feline Pneumonitis Grown in Allantoic Cavity of the Chick Embryo. Dorothy Hamre, Helen Rake and G. Rake.—p. 1.
Absorption from the Pulmonary Alveoli. C. K. Drinker and E. Hardenbergh.—p. 7.
Studies on Spreading Factors: II. Effect of Serum on Hyaluronidase Spreading Activity. O. Hechter and Ella L. Scully.—p. 19.
Tolerance to Bacterial Pyrogens. P. B. Beeson.—p. 29.
Cytochondria of Normal Cells, of Tumor Cells and of Cells with Various Injuries. E. L. Opie.—p. 45.
Inhibition by Certain Polysaccharides of Hemagglutination and of Multiplication of Influenza Virus. R. H. Green and D. W. Wooley.—p. 55.
Nature of Nonspecific Inhibition of Virus Hemagglutination. W. F. Friedewald, E. S. Miller and L. R. Whatley.—p. 65.

Journal of Lab. and Clinical Medicine, St. Louis

32:583-806 (June) 1947. Partial Index

Evaluation of Alterations Produced in Lymphoid Tissue by Pituitary-Adrenal Cortical Secretion. T. F. Dougherty and A. White.—p. 584.
*Purpura Following Estrogen Therapy, with Particular Reference to Hypersensitivity to (Diethyl) Stilbestrol and with Note on Possible Relationship of Purpura to Endogenous Estrogens. C. J. Watson, A. L. Schultz and H. M. Wikoff.—p. 606.
Essential Thrombocytopenic Purpura: Autopsy Findings in 36 Cases. A. J. Hertzog.—p. 618.
Experience with Pteroylglutamic (Synthetic Folic) Acid in Treatment of Pernicious Anemia. B. E. Hall and C. H. Watkins.—p. 622.
Effect of Synthetic Lactobacillus Casei Factor on Blood Changes Induced by Gastrectomy in the Rat. G. M. Higgins, D. J. Ingle and O. R. Joneson.—p. 635.
*Pernicious Anemia and Susceptibility to Gastric Neoplasms. H. S. Kaplan and L. G. Rigler.—p. 644.
Radiosensitivity of Erythroblasts. Margaret A. Bloom and W. Bloom. —p. 654.
Structure of Giant Cells in Blood Forming Organs. J. W. Rebuck. —p. 660.
Mitochondria and Their Relation to So-Called Hyaloplasm. O. P. Jones. —p. 700.
Evaluation of Bone Marrow Concentration Technics: Modified Method for Simultaneous Preparation and Staining of Blood and Bone Marrow Films. L. R. Limarzi.—p. 732.
Reticuloendothelial Origin of Bone Marrow Plasma Cells in Hypersensitive State. F. Kolouch, R. A. Good and B. Campbell.—p. 749.
Lymphocytogenesis in Human Lymph Nodes. R. Dorothy Sundberg. —p. 777.

Purpura Following Estrogen Therapy.—Five patients were observed by Watson and his associates in whom purpura followed administration of diethylstilbestrol or other estrogenic substances. Four of these were women being treated for menopausal symptoms or amenorrhea; one was an elderly man with carcinoma of the prostate. Four had received estrogen therapy, mainly diethylstilbestrol, for long periods, ranging from two and one-half to seven years. The fifth patient received estrogens parenterally, intermittently over a two month period. Evidence of hypersensitivity to diethylstilbestrol or estrone or both was manifested by each of the 3 patients available for skin testing, although absent in 25 controls.

Pernicious Anemia and Susceptibility to Gastric Neoplasms.—Kaplan and Rigler review statistical analyses which reveal that pernicious anemia and carcinoma of the stomach develop in the same individuals more often than would be expected on the basis of chance alone and must therefore be etiologically related. The evidence pertaining to the nature of this relationship is still inconclusive but suggests that the two diseases are probably linked indirectly through some common factor. Among the possible factors are hereditary or constitutional tendencies, achlorhydria, gastritis and liver therapy. In contrast to the paucity of gastric tumors discovered in nonselective mass surveys, serial gastric examination of persons with pernicious anemia has yielded a high incidence of benign and malignant epithelial tumors of the stomach. In serial x-ray examinations and gastroscopies of 211 patients with pernicious anemia described by Rigler and his associates two years ago 17, or 18 per cent, were found to have carcinoma of the stomach, and 15 (7.1 per cent) had benign polyps. Since then 48 new patients with pernicious anemia have been examined at the University of Minnesota, yielding 1 additional gastric cancer and 2 persons with benign polyps. Comparison of the reports from the Mayo Clinic over a period of twenty-five years reveals a distinct increase in the incidence of gastric cancer in patients with pernicious anemia. The greatly increased life expectancy of individuals with addisonian anemia since the introduction of liver therapy is generally offered as an explanation for this apparent increase in gastric cancer morbidity among them. The authors suggest that a search for other conditions etiologically related to or associated with gastric cancer is a necessary prerequisite to the establishment of practical, selective mass surveys for the early detection of neoplasms of the stomach.

Journal of Nervous and Mental Disease, New York

105:449-570 (May) 1947

Clinical Observations on Cutaneovisceral (Somatosympathetic) Reflex Arcs and the Role of Hypermyotonia in Bodily Aches and Pains. P. Skillern.—p. 449.
Social Implications of Dysphasia. W. Eliasberg.—p. 465.
Experimental Neurasthenia and Intellectual Overstrain. T. Braatöv.—p. 477.
Treatment by Insulin in Subshock Doses. W. Sargant and E. Slater.—p. 493.
Summary of the Growth Concept of Nervous Integration. D. E. Schneider.—p. 497.
Problem of Maladjustment in an Army Service Forces Training Center. E. Davidoff.—p. 500.

Journal of Thoracic Surgery, St. Louis

16:207-304 (June) 1947

Surgical Lesions of Esophagus Seen in Army Thoracic Surgery Center. E. B. Kay.—p. 207.
Technical Problems in Surgical Treatment of Carcinoma of Esophagus and Upper Stomach. J. H. Garlock.—p. 215.
Supradiaphragmatic Section of Vagus Nerves to Stomach in Gastrojejunal Ulcer. L. R. Dragstedt, J. S. Clarke, P. V. Harper Jr., E. R. Woodward and E. B. Tovee.—p. 226.
Announcement of Opportunities for Thoracic Surgeons in Veterans Administration Hospitals. B. Blades.—p. 237.
Diagnosis of Tetralogy of Fallot and Indications for Operation. Helen B. Taussig.—p. 241.
Technic of Creation of Artificial Ductus Arteriosus in Treatment of Pulmonic Stenosis. A. Blalock.—p. 244.
Endobronchial Balloon for Control of Bronchial Secretions During Lobectomy and Pneumonectomy. J. D. Moody, J. C. Trent and G. W. Newton.—p. 258.
Thoracogastric Fistula and Multiocular Empyema Complicating Posttraumatic Diaphragmatic Hernia. G. N. J. Sommer Jr. and W. O. Mills.—p. 265.
*Amyloid Disease of Lung Treated by Pneumonectomy: Report of Case. R. E. Weismann, O. T. Clagett and J. R. McDonald.—p. 269.
Case of Massive Conglomerate Tuberculosilicosis Simulating Pulmonary Neoplasm. W. Woodruff and W. O. Kelley.—p. 282.
Spontaneous Rupture of Esophagus: Report of Case with Recovery. N. W. Frink.—p. 291.
Horner's Syndrome and Hyperabduction Neurovascular Syndrome Following Intrapleural Pneumonolysis. A. Paley.—p. 298.

Amyloid Disease of Lung Treated with Pneumonectomy.—Weismann and his associates believe their patient to be first in whom localized amyloid disease involved the major bronchi and the corresponding pulmonary vessels at the hilus of one lung, and first in whom pneumonectomy has been successfully accomplished. The man, aged 35, had resumed full activity two months after the operation.

New Jersey Medical Society Journal, Trenton

44:219-252 (June) 1947

Some Recent Advances in Chest Surgery. R. H. Dieffenbach.—p. 222.
Hospital Practice of Medicine. W. G. Herrman.—p. 226.
*Peptic Ulcer Treated with Protein Hydrolysate: Report of 3 Cases. E. Margaretten and L. A. Kamer.—p. 228.
Intravenous Treatment of Tetanus. E. S. Balles.—p. 232.

Peptic Ulcer Treated with Protein Hydrolysate.—Margaretten and Kamer were able to produce great improvement with a protein hydrolysate diet in 3 peptic ulcer patients in whom the Sippy regimen had failed. In 2 of the patients the ulcer remained radiologically visible at the end of treatment; in 1 the ulcer disappeared within a week. The hydrolysate is given in the form of a mixture of dextrimaltose, sugar and protein hydrolysate in pineapple juice. Vitamins are administered in high dosage. The amount of hydrolysate is 30 grains (2 Gm.) per pound of body weight (or 4.4 Gm. per kilogram). One feeding is given on arising and one on going to sleep, the others being distributed throughout the day to a total of eight to ten feedings. Proteins have acid-binding properties and represent logical medication for peptic ulcer.

New York State Journal of Medicine, New York

47:1185-1312 (June 1) 1947

Electric Convulsive Therapy in Geriatrics. A. Gallinek.—p. 1233.
Aminophylline with Barbiturate as Rectal Suppository in Treatment of Asthma. H. L. Franklin.—p. 1242.
Physical Medicine in Treatment of Arthritis. H. Kessler.—p. 1244.
Gastritis-Ulcer Syndrome and Its Treatment. M. B. Kunstler.—p. 1248.
*Presence of Atypical Lymphocytes in Respiratory Diseases. S. O. Waife.—p. 1250.
Gynecic Factor in Causation of Male Impotence. A. L. Wolbarst.—p. 1252.
Further Improvements of the Sigmoidoscope. A. J. Cantor.—p. 1256.
Association of Meralgia Paresthetica with Sciatica. A. Ecker.—p. 1258.
Social Trends Affecting Medical Care. L. E. Gibson.—p. 1259.
Bacillus Pyocyaneus in Urinary Tract Infections. J. A. Lazarus, M. B. Marks and L. H. Schwarz.—p. 1262.

Atypical Lymphocytes in Respiratory Diseases.—Waife points out that the presence of numerous atypical (monocytoid) lymphocytes in the blood is regarded as a characteristic and pathognomonic feature of infectious mononucleosis. Some reports have stressed the fact that these cells may be found in other clinical states, but this is not so generally known. During the winter of 1945-1946 the author observed 32 cases of various respiratory tract infections in which 125 blood smears proved the presence of the atypical lymphocytes. Heterophil agglutination tests were negative. This confirms other reports that the infectious mononucleosis blood picture is not specific for that disease and may be found in a variety of mild respiratory infections.

Psychiatric Quarterly, Utica, N. Y.

21:1-168 (Jan.) 1947

Treatment of Schizophrenic Psychosis by Direct Analytic Therapy. J. N. Rosen.—p. 3.
Review, Case Studies, Therapy and Interpretation of the Acute Exhaustive Psychoses. M. L. Adland.—p. 38.
Effect of Vitamins A and D in Convulsive States. J. Nokin and J. J. Doltolo.—p. 70.
A Rorschach Compendium. Z. A. Piotrowski.—p. 78.
*Shock Therapy During Pregnancy. Emma M. Kent.—p. 102.
Clinical Evaluation of a New Sedative-Hypnotic (3,3-Diethyl-2,4-Dioxotetrahydropyridine) in Psychiatric Conditions. P. Polatin and W. A. Horwitz.

Shock Therapy During Pregnancy.—Kent employed various forms of shock therapy in 3 pregnant women. One manic depressive woman went through pregnancy uneventfully while receiving electric shock treatments in the sixth and seventh months of gestation. One paranoid schizophrenic woman miscarried at about four months while receiving her third course of combined electric convulsive therapy and ambulatory insulin. Another paranoid schizophrenic woman went through pregnancy to normal delivery while receiving ninety days of insulin (including eight genuine coma days) and twenty electric convulsive treatments in the fifth, sixth and seventh months of gestation. The author concludes from these observations that pregnancy should not necessarily be considered an indication to deprive a psychotic woman of needed shock therapy.

Psychosomatic Medicine, Baltimore

9:151-224 (May-June) 1947

Psychogenesis and Psychotherapy of Ulcerative Colitis. J. Groen.—p. 151.
*Group Study of Effect of Glutamic Acid on Mental Functioning in Children and Adolescents. F. T. Zimmerman, Bessie B. Burgemeister and T. J. Putnam.—p. 175.
Some Psychosomatic Aspects of Allergic Diseases. J. H. Mitchell, C. A. Curran and Ruth N. Myers.—p. 184.
Somatopsychologic Problem. R. G. Barker.—p. 192.
Camptocormia, or the Functional Bent Back. S. A. Sandler.—p. 197.
Psychologic Aspects of Medical Management of Diabetes in Children. Hilde Bruch and Irma Hewlett.—p. 205.
Low Back Problem. Barbara B. Stimson.—p. 210.
Treatment of 2 Cases of Bronchial Asthma with Electroshock Therapy. S. Cohen and C. S. Holbrook.—p. 213.

Glutamic Acid and Mental Functioning.—Zimmerman and his associates investigated the effect of l (+)-glutamic acid on mental functioning in children and adolescents. Of the 69 patients in this experiment 28 were children and adolescents with convulsive disorders. Eleven of this group of 28 were also mentally retarded. Thirty-three of the 69 patients were mentally retarded without convulsions. The most striking changes appeared in the seriously retarded group, in which statistically significant differences were obtained between test and retest intelligence quotients. Greater improvement occurred on tests requiring abstract thought than on those involving motor skill. In many cases a greater degree of emotional stability resulted.

Public Health Reports, Washington, D. C.

62:865-900 (June 13) 1947

Agglutination and an Agglutinin "Blocking" Property in Serums from Known Cases of Brucellosis. J. J. Griffitts.—p. 865.
Study of Murine Typhus Fever in Coffee County, Ala. E. L. Hill and S. C. Ingraham II.—p. 875.

62:901-932 (June 20) 1947

*Incidence of Poliomyelitis in 1946. C. C. Dauer.—p. 901.
*Fly Abatement Studies in Urban Poliomyelitis Epidemics During 1945. J. L. Melnick.—p. 910.

Incidence of Poliomyelitis in 1946.—Dauer says that during 1946 more cases of poliomyelitis were reported in the United States than for any prior year except 1916 The high incidence of poliomyelitis in 1946 involved chiefly the north central part of the country. There has been a mounting increase in ratio of cases to deaths in recent years, which is probably due to more complete reporting and inclusion of a greater proportion of nonparalytic cases. Poliomyelitis was also more prevalent in other parts of the Western Hemisphere in 1946. Epidemics appear to occur more frequently in tropical areas than is commonly stated. Accumulations of epidemiologic data in recent years appear to have strengthened the hypothesis that poliomyelitis is spread principally by person to person contact.

Fly Abatement Studies in Epidemics During 1945.—According to Melnick and his associates DDT was applied in two poliomyelitis epidemic areas, each with an area of about 4 square miles and inhabited respectively by some 67,000 and 27,000 people. A temporary reduction in flies was achieved in both areas. In the circumstances, which were not ideal, there was no effect on the poliomyelitis epidemic in either area. The authors think that the inconclusive results obtained in this work cannot be accepted as a final answer to the question.

Quarterly J. of Studies on Alcohol, New Haven, Conn.

8:1-196 (June) 1947

Recent Trends in Alcoholism and in Alcohol Consumption. E. M. Jellinek.—p. 1.
A Safe Method of Detoxicating the Acutely Ill Alcoholic. Z. M. Nason.—p. 43.
*Problem of Gaining Cooperation from Alcoholic Patient. H. M. Tiebout.—p. 47.
Experience in Short-Term Hospitalization of Alcoholic: Preliminary Report. C. N. Davis.—p. 55.
Imprisoned Abnormal Drinkers: Application of the Bowman-Jellinek Classification Schedule to an Institutional Sample: Part II. Illustrative Case Histories and Conclusions. M. Floch.—p. 61.

Gaining Cooperation from Alcoholic Patient.—Tiebout says that many physicians think that little can be done for an alcoholic addict unless he is willing to cooperate—and that usually he is not cooperative. This statement fails to take into account the fact that gaining the patient's cooperation should be regarded as the first part of a therapeutic process. Every sufferer from the disease of alcoholism passes through a long period when he is completely resistant to the idea that he is sick and should have help. No patient will cooperate with treatment unless he is conscious of the need for help. As a preliminary to feeling the need for help the patient must undergo certain experiences which produce that consciousness. In the alcoholic patient these experiences may be divided into two stages: (*a*) the stage when he is learning that alcohol is a problem to be tackled and (*b*) the stage when he is discovering that his own methods of tackling the problem are doomed to failure. At the outset of any contact with a person in need of help, the one who is in a position to help has the initial responsibility of inducing a willingness and a capacity to accept that help. The author discusses the steps by which this capacity is attained. Every person must take these steps before he can accept his role as patient. All that any therapist can do initially is to guide him in taking them, and this is an essential part of the therapeutic function.

Radiology, Syracuse, N. Y.

48:563-684 (June) 1947

Carcinoma of Skin: Influence of Dosage on Success of Treatment. C. H. Hale and G. W. Holmes.—p. 563.
Simultaneous Cross Radiation. M. A. Loebell.—p. 570.
*Erosive Bone Lesions and Soft Tissue Ossifications Associated with Spinal Cord Injuries (Paraplegia). N. Heilbrun and W. G. Kuhn Jr.—p. 579.
High Intensity Radiation from Beryllium Window X-Ray Tubes. T. H. Rogers.—p. 594.
Low Absorption Roentgen Ray Measurements from 500 to 1,000 Kilovolts. E. D. Trout and Z. J. Atlee.—p. 604.
Experimental Clostridial Infections in Dogs. J. G. Vincent, Helen W. Vincent and A. H. Dowdy.—p. 610.
Study of Quality and Origin of Parasitic Radiation from Target of an X-Ray Tube. L. Mallet and R. Maurin.—p. 628.
Chronic Salmonella Bone Infection. H. Greenfield.—p. 633.
Calcification of Pleura and Lung. E. L. Lame and E. P. Pendergrass.—p. 636.

Erosive Bone Lesions and Soft Tissue Ossifications Associated with Spinal Cord Injuries.—Heilbrun and Kuhn describe erosive bone lesions and soft tissue ossifications observed in a survey of 99 cases of paraplegia. Although they frequently occur in the same person, they are not related etiologically. The erosive lesions develop where soft tissue becomes devitalized over bony prominences such as the trochanters. There is a subacute and chronic infection of the tissue overlying the bone, with extension to the superficial layers of bone. This leads to resorption of the cortex and the underlying trabeculae. The bone marrow is replaced by fibrovascular tissue which accompanies the low grade inflammatory process. The cause of the development of the soft tissue ossifications is not understood. Although soft tissue trauma may assume an important role, the neurogenic influence cannot be disregarded.

Rhode Island Medical Journal, Providence

30:325-408 (May) 1947

Role of the General Practitioner in Diagnosis of Pelvic Cancer. L. C. Scheffey.—p. 339.
Treatment of Small Bowel Obstruction. R. R. Baldridge.—p. 344.
Lymphatic Spread of Carcinoma and Its Management. G. W. Taylor.—p. 347.
Gallbladder *Perforation: Unusual Case with Laceration of Liver and* Hemoperitoneum. A. E. Hardy and P. J. Spelman.—p. 349.
Group Practice in Small Community. R. F. DeWitt.—p. 392.
Medical Groups in the United States, 1946. G. H. Hunt.—p. 394.

30:409-492 (June) 1947

Control of Typhus Fever. S. Bayne-Jones.—p. 423.
Changes in Medical Practice. H. C. Pitts.—p. 431.
Medical Examiners' Problem in Rhode Island. A. J. Gaudet.—p. 433.
Amebiasis in a Rhode Island Child. H. B. Marks.—p. 442.

Rocky Mountain Medical Journal, Denver

44:433-504 (June) 1947

Antibiotics in Otolaryngology. O. E. van Alyea.—p. 451.
Pertinent Facts on Medical Economics. E. J. McCormick.—p. 453.
Indications for Surgery in Congenital Cardiovascular Anomalies. S. Gibson.—p. 459.
Penicillin Therapy in Diseases of the Chest. A. M. Mullet.—p. 461.

44:505-580 (July) 1947

Indications for Vagus Nerve Resection in Treatment of Peptic Ulcer. R. Woodruff and R. T. Hunter.—p. 523.
Extrapleural Pneumothorax: Adjunct in Treatment of Active Pulmonary Tuberculosis. A. Rest and W. B. Condon.—p. 526.
Bronchiectasis. F. R. Harper.—p. 529.
*Pulmonary Pseudocysts Associated with Pneumonia. L. J. Flax, M. M. Ginsburg and C. J. Stettheimer.—p. 532.
Diaphragmatic Hernia: Rare Type. A. B. Gjellum, V. V. Anderson and C. W. Vickers.—p. 534.
Compression Fracture of Sixth Dorsal Vertebra Producing Substernal Pain Resembling Coronary Occlusion. A. M. Mery and C. P. Stevenson.—p. 536.

Pulmonary Pseudocysts Associated with Pneumonia.—Flax and his associates say that true congenital lung cysts are rare and suggest that many cases that suggested congenital pulmonary cysts by x-ray were probably examples of acquired emphysematous cavities. These may develop during an infection of the respiratory tract in which a portion of the bronchial tree becomes occluded by inflammatory exudate and mucosal swelling with the formation of a check valve obstruction. The regional alveoli then become distended and may rupture. With the coalescence of a group of ruptured alveoli a large emphysematous cavity is formed; in infected areas inflammatory exudate may seep into the cavity and produce air-fluid levels. The authors present the histories of 2 infants with severe pneumonia in whom the x-ray revealed large lung cavitations. The differential diagnosis included the possibility of lung cyst, lung abscess, diaphragmatic hernia and pulmonary tuberculosis with cavitation. On penicillin therapy both children responded with gradual clinical improvement. Serial x-ray studies demonstrated the disappearance of the cavities with the subsiding infection and removal of the bronchial obstruction.

South Carolina Medical Assn. Journal, Florence

43:157-188 (June) 1947

President's Address. J. McLeod.—p. 157.

Experiences at Bikini: Comments on Nuclear Energy in Medicine. E. P. Pendergrass.—p. 159.

Public Health Program: Importance of Diseases in Postwar America. D. D. Brockman.—p. 164.

Southern Surgeon, Atlanta, Ga.

13:365-430 (June) 1947

Surgical Aspects of Thrombocytopenic Purpura. R. S. Dinsmore.—p. 365.

Use of Atmospheric Pressure in Obliterating Axillary Dead Space Following Radical Mastectomy. D. R. Murphey Jr.—p. 372.

Present Status of Surgical Treatment of Carcinoma of the Lung. W. Francis Rienhoff Jr.—p. 376.

Thrombin and Its Clinical Applications. K. M. Brinkhous.—p. 397.

Control of Hemorrhage in Otolaryngology. M. A. Gilmore.—p. 403.

Institutional Study of Acute Appendicitis over a Twenty-Three Year Period. J. R. Young and C. W. Perry.—p. 415.

Massive Resection of Small Intestine Due to Multiple Gangrenous Areas: Case Report. R. J. Wilkinson, C. S. Clay and S. Werthammer. —p. 419.

Union Médicale du Canada, Montreal

76:661-788 (June) 1947. Partial Index

Ten Years of Thoracoplasty: Statistical Study. G. Deshaies, G. Roland and B. G. Bégin.—p. 665.

Recent Contributions to Study of Coagulation. J. Lussier.—p. 673.

New Classification of Chronic Nephritides. P. Vallery-Radot.—p. 690.

Gastroduodenal Ulcer and Resection of Vagus. R. Champoux.—p. 698.

Urologic & Cutaneous Review, West Palm Beach, Fla.

51:193-256 (April) 1947. Partial Index

*Problem of Falsely Negative and Positive Reactions in Serum Diagnosis of Syphilis. J. A. Kolmer.—p. 193.

Syphilis of Liver at Cincinnati General Hospital. R. T. Thompson. —p. 195.

Is the Heart Disease of Those Who Have Positive Serology Always Due to Syphilis? N. S. Davis.—p. 198.

Neurosyphilis as Seen by Internist: Diagnosis and Present Day Evolutionary Therapy. C. Bernstein and S. D. Klotz.—p. 200.

Syphilis, Hypertension and the Endocrines. J. H. Hutton and S. Fahlstrom.—p. 203.

Syphilis of Stomach as a Problem in Internal Medicine. A. J. Kauvar and S. S. Kauvar.—p. 206.

The Ureter Five Years After Nephrectomy for Tuberculosis. A. P. Gorro, J. P. Sierra and L. Azagra.—p. 209.

Treatment of Varicocele. E. B. Ribeiro.—p. 212.

Falsely Negative and Positive Reactions in Syphilis.—Kolmer says that no test can be sufficiently sensitive for the detection of all cases of syphilis. All tests now employed can be made more sensitive by technical modifications but only at the expense of falsely positive reactions. It is far better to miss the serum diagnosis of an occasional case of chronic syphilis than to incur the risks of falsely positive reactions in nonsyphilitic individuals. The clinician should never permit negative reactions to override his clinical judgment. Positive serologic reactions should never be ignored simply because they are clinically unexpected, since they may be, and frequently are, the only evidence of syphilis. Unexpected positive reactions should always be checked along with thorough clinical examinations, before the patient is informed or treatment instituted. While a large percentage of falsely positive reactions are due to errors in technic, all serologic tests are capable of yielding biologic falsely positive reactions regardless of every precaution against technical errors. In all tests, however, they are much less likely to occur with spinal fluids than with serums. Falsely positive reactions should be suspected when (*a*) the reactions are consistently weak or doubtful with occasional stronger reactions, (*b*) when discordant results are observed in different laboratories and (*c*) when negative complement fixation and positive flocculation reactions are observed. Under these conditions judgment and treatment should be withheld, but the tests should be repeated at intervals over a period of at least three to six months.

Virginia Medical Monthly, Richmond

74:241-288 (June) 1947

SYMPOSIUM ON GENERAL PRACTICE

Pediatric Goals for General Practitioner. B. B. Jones.—p. 241.

Can Obstetric Care Be Improved? A. L. Carson Jr.—p. 243.

Neuropsychiatry as It Relates to the General Practitioner. J. R. Blalock. —p. 246.

Hypertensive Vascular Disease: Its Evaluation and Management. J. R. Beckwith.—p. 249.

Laboratory and Diagnostic Methods of Interest to the General Practitioner. W. B. Martin.—p. 256.

Cancer of Colon and Rectum Emphasizing Aseptic Primary Anastomosis for Lesions of Colon. F. S. Jones and W. A. Johns.—p. 260.

Current Trends in Surgery of Colon and Rectum for Cancer. A. S. Graham.—p. 266.

Treatment of Dysmenorrhea. H. C. Spalding.—p. 271.

Yale Journal of Biology and Medicine, New Haven

19:393-777 (March) 1947. Partial Index

Bringing Order into Administration of Health Services. R. M. Atwater. —p. 421.

Effect of Urbanization on Trend of Adult Mortality in the United States. J. H. Watkins and S. de Sao Paulo.—p. 443.

Vital Statistics During the War. I. M. Moriyama.—p. 453.

Challenge to the Voluntary Health Agency. P. S. Platt.—p. 461.

Food and Its Relation to Public Health. F. W. Fabian.—p. 471.

*Dust Hazard in Tremolite Talc Mining. L. Greenburg.—p. 481.

Recent Trends in Housing Activity of Local Health Departments. A. A. Twichell.—p. 503.

The Sanitary Engineer in Public Housing. M. A. Pond.—p. 511.

Peripheral Spread of Poliomyelitis Through Rural and Urban Areas: Observations from a Recent Epidemic. J. R. Paul.—p. 521.

Bacillary Dysentery in Human Volunteers. H. J. Shaughnessy and others.—p. 537.

Epidemic Tinea Capitis: Public Health Problem. R. K. C. Lee.—p. 547.

Control of Syphilis by Quarantine: Statewide Quarantine Program for Control of Infectious Syphilis. J. M. Chisolm.—p. 557.

Changing Concepts in Public Health Education. Lucy S. Morgan and E. N. Tyler.—p. 581.

Milestones in Sight Conservation. F. M. Foote.—p. 593.

Improving School Health Programs. C. C. Wilson.—p. 603.

Progress in Teaching Preventive Medicine in Medical Schools. H. R. Leavell.—p. 671.

*Geriatrics in Industrial Medicine. C. Kuh.—p. 697.

Dust Hazard in Tremolite Talc Mining.—Greenburg reports a study of the tremolite talc mining and milling industry in northern New York State. In a group of 221 tremolite talc miners and millers, advanced fibrosis was found in 32 men. All patients were men who had been working with tremolite talc for ten years or longer. Among this group of 107 men the incidence was 29.9 per cent. The fibrosis was of a fine diffuse type with the x-ray appearance of granulation or nodulation on a hazy background. It tended to be disabling in character and was frequently accompanied with dyspnea, cough and fatigue. There was also some evidence that this fibrosis was characterized by an increased susceptibility to tuberculosis. In addition to fibrosis, deposits of unidentified opaque material in the periphery of the lungs, so-called talc plaques, were observed in 6.3 per cent of all tremolite talc workers. These deposits could not be identified with any particular signs or symptoms. The author concludes that tremolite talc is a silicate dust capable, like asbestos, of causing a disabling pneumonoconiosis.

Geriatrics in Industrial Medicine.—Kuh points out that out of the need for manpower the war brought about a favorable change in attitude toward the employment of older persons in industry. It is important to continue their employment, for otherwise we shall saddle on the diminishing fraction of younger persons an increasing burden to support the aged either directly or indirectly through taxation. Age brings with it compensations that tend to maintain the value of the aged person to the employer. Older persons have fewer accidents and, while speed of reactions may decline with age, there is increased skill and better judgment as the result of longer training and experience.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Disease in Childhood, London

22:1-64 (March) 1947

*Primary Tuberculous Infection in Childhood Incidence, Morbidity and Mortality in an Urban Population. B. C Thompson.—p. 1.
*Purpura Necrotica: Possible Clinical Application of the Shwartzman Phenomenon. J. H. Sheldon.—p. 7.
Chronic Intussusception in Infancy and Childhood. W. G. Wyllie and R. J. Pugh.—p. 14.
Lymphocytic Meningitis with Lung Involvement Occurring In Childhood. J. Apley.—p. 18.
Infantile Beriberi in Singapore During the Latter Part of the Japanese Occupation. G. Haridas.—p. 23.
Cold Sweating, Hypoglycemia and Carbohydrate Insufficiency, with Particular Reference to Celiac Disease. J. L. Emery p. 34.
Carbohydrate Metabolism in the Celiac Syndrome J. L. Emery.—p. 41.
Blood Volume Changes in Anemia Following Transfusion. S. J. M. Russell.—p. 50.
Care of Premature Infants at Home. F. J. W Miller.—p. 54.

Primary Tuberculous Infection in Childhood.—Thompson reports results of tuberculin tests on 1,476 children below the age of 14 who attended a chest clinic in London. Of these, 1,050 came primarily without symptoms, as contacts of known cases of tuberculosis. The remaining 426 were referred on account of specific symptoms. The 1,050 were designated "contacts," the 426 "noncontacts." Seven of the children died. None of the 426 noncontacts died. Of the 41 patients whose condition was diagnosed outside the clinic as tuberculosis, 1 died—a child with generalized tuberculosis already moribund when notified. The six remaining deaths took place among the 1,050 contacts. All 6 children were in contact with a sputum positive adult at or near the time of being found tuberculin positive. The rapidity with which death ensued is in keeping with the observation of Wallgren that fatal generalization from a primary complex occurs almost invariably at about twelve weeks from the development of tuberculin sensitivity. Observations on the children tested and on other tuberculous patients in the area under consideration indicate that the majority of the deaths from tuberculosis in children occurred suddenly, in the absence of a history of contact or of prolonged illness. It therefore does not appear that treatment can be expected to influence the outcome in children with primary tuberculous infection or that the detection of a higher proportion of such cases by intensified diagnosis is likely to diminish the general mortality. We cannot say whether any given child will or will not undergo a rapid and fatal generalization of the disease, nor probably have we at present power to influence the issue. We can predict with some confidence a more or less complete recovery if the first three months are survived. Those who will develop phthisis after adolescence are more likely to do so by reason of continued or resumed contact. The cleaning out of infectious tuberculosis from each household, therefore, becomes a paramount object. It would seem that the mortality from tuberculosis in childhood can be substantially reduced only by discovering and eliminating infectious tuberculosis in adults.

Purpura Necrotica and the Shwartzman Phenomenon.—Sheldon describes 3 cases of an illness which seems to attack children chiefly, if not exclusively. It begins with features typical of an attack of allergic purpura; the purpuric lesions are associated with necrosis of the tissues, and healing is accompanied with separation of the resulting sloughs. These vary in severity from necrosis of the superficial layers of the skin to lesions penetrating deep into the underlying muscles, resulting in severe and permanent scarring. It is suggested that the disease may be connected with the Shwartzman phenomenon and that in the early stages it may be characterized by short, critical phases during which the operation of slight but continued pressure may determine areas subsequently to be the site of deep necrosis. The scars have a distinctly artificial appearance, especially the straight sides joined by a right angle. It is common to see linear marks on the buttocks of patients caused by pressure from the crumplings and folds of their pajamas, and such lines at times mark out a triangle. Such an explanation involves, however, the further assumption that during the active period of the disease there is a critical phase within which the sensitizing process reaches a maximum, so that quite slight but continued pressure can mark out areas on the skin subsequently to be the site of deep necrosis.

British Medical Journal, London

1:835-870 (June 14) 1947

Measurement of Human Skill. F. C. Bartlett.—p. 835.
Conception of Industrial Health. R. C. Browne.—p. 838.
*Surgical Emphysema Due to Compressed Air. A. M. Desmond.—p. 842.
*Digital Foreign Bodies in Spot Welders. W. A. B. Reynard and F. Smith.—p. 843.
Symmetrical Gangrene in the African. M. Gelfand.—p. 847.

Surgical Emphysema Due to Compressed Air.—Desmond thinks that the hazards associated with the careless use of compressed air are recognized but that the occurrence of tissue emphysema in the presence of even the smallest wounds has not been sufficiently brought to notice. He reports the experience of a metal miller aged 16 whose hand had been hurt by a small piece of metal shaving ("swarf"), which had punctured the ulnar side of the palm. The boy removed it, and the wound bled a little. He then, in an attempt to remove the remainder of the "swarf," directed the nozzle of an air compressor pump on to his hand, which instantaneously became ballooned and painful. An x-ray showed air in the soft tissues of the ulnar side of the hand and of the webs between the fingers. He was treated with local heat, sling immobilization and a prophylactic course of sulfadiazine. Next day the hand remained swollen but was less painful. Sulfadiazine and immobilization were continued. The following day the swelling had completely subsided; there was full function and no pain. A further x-ray examination showed a normal soft tissue shadow, and he returned to work six days after the accident. Workmen should be warned; not one workman at the small metal milling factory at which this incident occurred was aware of these dangers.

Digital Foreign Bodies in Spot Welders.—Reynard and Smith observed an industrial injury to the hand and fingers sustained by employees engaged in spot welding. The first of the 12 injuries described in this report was sustained by a woman aged 18 who while spot welding small steel brackets on Nov. 13, 1945 received a jet of sparks from the welding machine into the tip of her right forefinger. She felt a stabbing pain and rapidly the finger became white at the tip, was painful and began to swell. On November 20 she reported the injury at the works hospital. Kaolin poultices were applied daily for a week. At the end of that time a small metallic foreign body was picked out with an eye spud, and temporarily the condition was settled. On Jan. 1, 1946 the finger became painful again; another piece of metal was removed and a small pinhead abscess evacuated. By February 25 she complained of a pricking sensation in the finger when handling small objects, and tenderness to the slight touch. Her disability had necessitated a change of job to one in which fine finger movements were not essential. On March 11 a lateral incision was made, extending into the cornified entry wound at the finger-tip, and a minute superficial cavity containing necrotic material was opened up. Deep and proximal to this cavity the metallic foreign bodies were located and as many as possible extracted with the point of the knife. The wound healed by first intention, and when seen again recently the patient had no complaint. She had returned to her old job of spot welding. This and other cases described indicate that the lesion consists of a superficial burn, minute entrance wounds and underlying foreign bodies. The most satisfactory preventive device to date are cotton gloves coated with "Neoprene" and asbestos fabric finger stalls worn under the usual cotton gloves.

Edinburgh Medical Journal

54:193-268 (April-May) 1947

Action of Salicylates in Rheumatic Fever. A. J. Glazebrook and B. Cookson.—p. 193.
Basis of Prognosis. D. M. Lyon.—p. 210.
Result of Arthroplasty of Elbow Joint After Thirty-Two Years. G. G. Turner.—p. 225.
Role of General Practitioner in Future Midwifery Practice. J. B. Dewar.—p. 228.
Action of Toxic Doses of Insulin on Suprarenal Medulla in Rabbits. Z. Z. Godlowski.—p. 239.
Etiology of Erythema Nodosum. A. W. Branwood.—p. 247.
Vitamin A Content in Human Liver. L. Dzialoszynski and W. Tomaszewski.—p. 252.

Journal of Physiology, Cambridge

106:113-236 (June) 1947. Partial Index

Experimental Analysis of Jugular Pulse in Man. I. F. S. Mackay.—p. 113.
Optimum Intrapulmonary Pressure in Underwater Respiration. W. D. M. Paton and A. Sand.—p. 119.
Distribution of Nucleotide, Phosphocreatine and Glycogen in the Heart. F. Davies, E. T. B. Francis and H. B. Stoner.—p. 154.
Rigor Mortis and Adenosinetriphosphate. E. C. Bate-Smith and J. R. Bendall.—p. 177.
Effect of Seat Position on Efficiency of Bicycle Pedaling. P. Hugh-Jones.—p. 186.
Effects of Changes in Dietary Protein on Composition and Structure of Liver Cell. H. W. Kosterlitz.—p. 194.

Lancet, London

1:815-854 (June 14) 1947

The Clinician and the Rh Factor. L. Parsons.—p. 815.
*Clinical Trial of Di-Insulin. A. Slessor and T. Nicol.—p. 820.
*Typing of Typhoid Bacilli with Vi Bacteriophage: Suggestions for its Standardization. J. Craigie and A. Felix.—p. 823.
Folic Acid in Agranulocytosis. D. A. K. Black and S. W. Stanbury.—p. 827.
Traumatic Neuritis of Deep Palmar Branch of Ulnar Nerve. W. R. Russell and C. W. M. Whitty.—p. 828.
Case of Hiccup: Revival of an Old Remedy. R. C. Nairn.—p. 829.

Clinical Trial of Di-Insulin.—Slessor and Nicol say that Hey of Denmark reported success with an insulin mixture, di-insulin, which exerts a rapid and prolonged action. This preparation consists of equal parts of soluble insulin and of a new derivative, phenyl-ureido-insulin (iso-insulin), which Hallas-Møller developed in 1944. In contrast to the protamine insulins, iso-insulin has the desirable property of being miscible with soluble insulin without altering the proportions of the two components. Its effect lasts sixteen to twenty-four hours after injection. The mixture di-insulin is a clear solution containing 40 units per cubic centimeter. After testing di-insulin on 5 healthy men, the authors used it on 12 diabetic patients. They found that the protracted effect of the iso-insulin component was demonstrable in normal persons and in diabetic patients requiring less than 50 units of insulin. In the latter a single injection of di-insulin controlled the blood sugar throughout the twenty-four hours; but in those requiring 50 units or more one injection of di-insulin was unsatisfactory, producing hypoglycemia three to eight hours after injection and not controlling the blood sugar in the late evenings and during the night. The soluble insulin content in the di-insulin mixture is thought to be too high.

Vi Bacteriophage in Typing of Typhoid Bacilli.—According to Craigie and Felix the phage typing method reveals strain differences which cannot be demonstrated by any serologic method. A carrier may be absolved from responsibility for a given outbreak if he is excreting a strain of Salmonella typhi which differs in Vi phage typing from those isolated from the cases. Any typing scheme recommended at present must be designed to accommodate new types that may be found later in different parts of the world. Provision will have to be made by an authoritative international body, so that reference standards, both cultures of Vi type strains of S. typhi and standard typing phage preparations, should be available to all using the method. A scheme which is to be used as an epidemiologic guide must be based primarily on epidemiologic evidence. The epidemiologic information which has been accumulated in various countries to date has been carefully considered before proposing the scheme presented in this paper. All the phage preparations used for the identification of the types and subtypes listed in the proposed scheme have been derived from one strain of specific typhoid Vi bacteriophage: the Vi phage II (strain 6) described by Craigie and Yen in 1937 and 1938. Until extensive comparative investigations have been made, the routine typing of strains of S. typhi should be carried out exclusively with the preparations of Vi phage II giving the reactions specified in the scheme. The authors discuss types and subtypes that merit special comment and describe the material and methods required for typing with Vi bacteriophage.

Medical Journal of Australia, Sydney

1:545-576 (May 3) 1947

Reflections on Freedom. H. R. R. Grieve.—p. 545.
Treatment of Carcinoma of Larynx. R. M. Glynn.—p. 548.
Calcification Occurring in the Eye. P. B. English.—p. 549.

1:577-604 (May 10) 1947

Blood Group Frequencies in Admiralty Islanders: Further Observations on the Fijians and Indonesians and on Rh Gene Frequencies in Some Other Races. R. T. Simmons and J. J. Graydon.—p. 577.
Psychologic Aspects of Early Diagnosis of Cancer. N. V. Youngman.—p. 581.
Carbonic Anhydrase Content of Blood of 100 Normal Australian Subjects. W. J. Lawrence.—p. 587.
Penicillin in Some Chest Conditions, with Report of Case of Pneumonia, Empyema and Lung Abscess in Infant Aged One Month. W. F. J. Cammack.—p. 589.

1:633-660 (May 24) 1947

Mustard Hypersensitivity and Achlorhydria. E. R. Trethewie.—p. 633.
*Iodine Treatment of Monilial Infection of Vagina. Claire Weekes.—p. 636.
Prefrontal Leukotomy. J. H. Hurt.—p. 638.
Thalassotherapy: Importance in a Program of Public Health. G. Dalla Torre.—p. 640.
Sacrococcygeal Dermoid Sinus (Pilonidal Sinus). G. Brosnan.—p. 641.
Pleural Adhesions: Effect on and Treatment in Artificial Pneumothorax. A. H. Penington.—p. 644.

Iodine Treatment in Monilial Infections.—Weekes used liquor iodi mitis locally twice a week in the treatment of 50 patients with monilial infection of the vagina. It was found to be the quickest and most successful treatment so far used at the clinic and is now being used there almost exclusively. Thirty-eight of the 50 patients treated were cured; all pruritus subsided and no growth of Monilia was obtained on attempted culture for at least one month after the final treatment. The cured patients have remained free from signs and symptoms for from eight to three months. The number of paintings necessary to effect cure ranged from one to nine, the majority of patients requiring three to four paintings, with an interval of three days between paintings. In 6 of the 12 patients not cured by iodine the monilial infection was complicated by diabetes mellitus, chronic salpingitis, vulval warts or pregnancy. Only 4 of the patients not responding to iodine had simple monilial vaginitis.

Proceedings of the Royal Society of Medicine, London

40:347-418 (May) 1947. Partial Index

*Nutritional Liver Disease in West Indian Infants. J. C. Waterlow.—p. 347.
Some Renal Effects of Experimental Dietary Deficiencies. H. Heller and S. E. Dicker.—p. 351.
Treatment of Tuberculous Salpingitis, with Special Reference to X-Ray Therapy. E. Philipp.—p. 376.
Whooping Cough and Measles: Epidemiologic Concurrence and Contrast. W. Butler.—p. 384.
Value of Tomography in Lesions of Main Bronchi and Their Larger Subdivisions. S. Nowell.—p. 399.
Disseminated Ossified Nodules in Lungs Associated with Mitral Stenosis. A. Elkeles.—p. 405.

Nutritional Liver Disease in West Indian Infants.—Waterlow says that a disease occurs among babies in the West Indies whose main features are edema, gross muscular wasting and fatty infiltration of the liver. The onset is usually within three months of weaning. The edema is of the hypoproteinemic type, without albuminuria. The mortality of the disease is high. Analysis of the liver in fatal cases shows a fat content of up to 50 per cent of the fresh weight. Hepatic functional impairment may be demonstrated during life by the sulfobromophthalein test. This syndrome resembles closely the disease known in Africa as kwashiorkor, or infantile pellagra. In the African cases there are typically severe lesions of the skin and mucocutaneous junctions and depigmentation of the hair. In the West Indian babies lesions of the skin, hair and mucosa were seldom severe and were sometimes absent. It is generally agreed that the underlying cause is a dietary deficiency of some kind. In the West Indies it was found that a striking improvement occurred with no other treatment than an increased intake of milk. On an intake of 7 or 8 ounces daily the condition remained more or less stationary; when the intake was increased to 30 ounces there was a rapid loss of edema, a rise in serum protein concentration and in dye clearance, and a more gradual decrease in the size of the liver. The history and the response to treatment suggest that the underlying deficiency in this fatty liver disease is either of protein or of some member of the vitamin B_2 complex. Enlargement of the liver without enlargement of the spleen is an indication for a supply of extra milk.

Journal International de Chirurgie, Brussels

7:77-156 (March-April) 1947. Partial Index

*Influence of Treatment with Penicillin on Development of Acute Osteomyelitis Caused by Staphylococcus Aureus. J. Leveuf and G. Laurence. —p. 78.

Effect of Local Application of Penicillin on Tissues and Treatment of Wounds. A. Ritter and A. Pletscher. —p. 106.

Penicillin in Acute Osteomyelitis.—Leveuf and Laurence say that at the surgical section of the children's clinic of the Paris faculty 78 children with acute osteomyelitis were treated with penicillin. They describe the treatment employed at their clinic before the introduction of penicillin and cite the results obtained with it. When penicillin was introduced, the dosage was at first 100,000 units daily, but later up to 500,000 units was given daily by intramuscular injection. Otherwise the treatment was practically the same as it had been before the introduction of penicillin. One fatality occurred among the 78 cases. The authors think that most of the 7 cases, in which the diagnosis had been based only on clinical evidence and which progressed without suppuration and without the appearance of x-ray signs, were probably diagnosed erroneously. Forms that did show x-ray signs but did not progress to suppuration were somewhat more frequent with penicillin therapy (21 of 78) than without it. The usual course with abscess formation and sequestration was observed in 45 of the 78 cases. Introduction of penicillin into the medullary cavity was tried in 4 cases but then was abandoned. The authors conclude that analysis of the influence of early treatment of acute osteomyelitis on its evolution, the temperature curve, the blood cultures, the virulence of the microbes, the length of suppuration and sequestrum formation has not demonstrated that the effect of penicillin is spectacular. They point out that reports of the replacement of emergency surgery, such as trepanation, with penicillin are inconclusive because they merely demonstrate the evils of emergency operation.

Presse Médicale, Paris

55:369-388 (June 4) 1947. Partial Index

*Progressive Scleroderma with Hepatosplenic Calcification. P. Harvier and M. Bonduelle.—p. 369.

Anatomic Aspect of Cirrhogenous Splenopathy: Nodular Reticulofibrosis of Spleen. J. Olmer and H. Gastaut.—p. 370.

Atrophic Unilateral Renal Sclerosis. R. Lutembacher.—p. 372.

*Ligation of Inferior Vena Cava as Means of Prevention of Pulmonary Embolism in Course of Phlebitis. L. Léger and J. Oudot.—p. 374.

Tuberculosis of Eye: Jensen's Retinitis. G. Renard.—p. 376.

*Grave Febrile Anemia in Association with Acute Leukosis Treated with Penicillin and Repeated Transfusions; Apparent Recovery for Twenty Months. J. Decourt, R. André and J. Guillemin.—p. 378.

Progressive Scleroderma.—Harvier and Bonduelle report the occurrence of the Thibierze-Weissenbach syndrome in a woman aged 29 with progressive scleroderma of fifteen years' duration. Considerable calcification of the liver and spleen was demonstrated by x-ray, revealing precisely the outlines of these organs. Interhepatosplenic trails of shadows seemed to belong to the branches of the celiac trunk. The contour of the spleen was reduced after an injection of epinephrine. Functional liver tests gave normal results. It is suggested that the calcium is deposited in the capsule of the organs involved and that it is of no importance for the prognosis.

Ligation of Inferior Vena Cava.—Léger and Oudot ligated the inferior vena cava in 3 women between the ages of 29 and 44 and in 1 man aged 50 with repeated pulmonary embolism. The embolic process was checked immediately by the operation. The inferior vena cava was ligated also in 2 women with phlebitis, one of whom was pregnant near term. The occurrence of embolism with pulmonary infarction was prevented, and recovery resulted in both cases. Intervention consisted of ligation in 3 of the cases, while a section was made between two ligatures of the trunk of the inferior vena cava in 3 other cases. The vein contained a clot in 2 cases. The vein appeared to be free in the 4 other cases. The difficulty of appreciating the anatomic condition of the vein by simple inspection or palpation is emphasized in 3 of these cases in which ligation was employed without section. Additional observations are required for answering the question whether ligation of the inferior vena cava should be carried out immediately after the first embolism whose recurrence is threatened or whether ligation should be employed in the presence of manifest phlebitis.

Penicillin in Grave Febrile Anemia.—Decourt and his co-workers report the occurrence of grave anemia with leukopenia, temperature up to 104 F. and prostration in a youth aged 19. An acute leukosis was revealed on blood examination. The bone marrow was almost completely invaded by cells of the same type. Treatment consisted in daily blood transfusions for two months, with a total amount of 10 liters of blood and administration of 100,000 units of penicillin for twelve days. Blood cultures which preceded the administration of penicillin were negative. Recovery resulted after a grave course of two months' duration with prolonged mental disturbances. The blood count and the bone marrow remained normal for twenty months. Although the diagnosis of leukosis was confirmed by several hematologists, it still appears doubtful. The possibility of an exceptionally prolonged remission is to be considered.

Schweizerische medizinische Wochenschrift, Basel

77:583-626 (May 31) 1947. Partial Index

Besnier-Boeck-Shaumann's Disease and Roentgen Examinations in the Army. G. Schönholzer.—p. 585.

*Cerebrospinal Fluid Changes in Pseudosyphilitic Wassermann-Positive Bronchopneumonia. R. Hegglin.—p. 588.

Vaccination Against Exanthematic Typhus in Course of Epidemic in Algeria in 1941-1943. L. Jame and A. Jude.—p. 589.

Prophylaxis of Tuberculosis in French Army. Debenedetti and Dutrey. —p. 591.

Penicillin and Sulfonamides in Clinical Infections: Comparison of Mode of Action. Crosnier.—p. 595.

Cerebrospinal Fluid Changes in Wassermann Positive Bronchopneumonia.—Hegglin observed in 1940 among mountain troops a form of pneumonia in which the serologic reactions for syphilis were positive. Later investigations suggested that this so-called Wassermann positive pneumonia was an infection of the air passages by a specific virus. The virus genesis is indicated among other factors by the positive cold agglutination. This also indicates a relationship to infectious mononucleosis, which is also often accompanied not only by cold agglutinations but also by syphilitic reactions. The author studied the cerebrospinal fluid in 9 cases of bronchopneumonia in which the blood Wassermann reaction had been positive. A positive result was obtained in 2. Both demonstrate that in pseudosyphilitic bronchopneumonia cerebrospinal fluid changes may occur which may simulate a syphilitic cerebrospinal disorder.

Revista Médica de Córdoba

35:57-114 (Feb.) 1947. Partial Index

*Beginning of Pulmonary Tuberculosis in Adults. G. Sayago and M. Gomez Casco.—p. 57.

Pulmonary Tuberculosis.—The lack of early symptoms in adults suggests that an early diagnosis requires a systematic and repeated radiologic survey of people and the importance of tuberculin controls principally of ambulant persons, among whom the possibilities of primary infection are greater. The influence of contagion among people at the beginning of adult reinfection is demonstrated by epidemiologic, anatomic and clinical research. The first changes in the roentgenograms in the initial forms of adults consist of the appearance of infiltrative focal processes, which aspect varies from that of cloud infiltrates to that of the typical shadows of early infiltrates. Hematogenic spread as the initial form of tuberculosis in the adult is rare. The danger of contagion in most initial forms exists in 35 per cent of cases, since bacteriologic investigations of gastric contents are positive in that proportion.

American Review of Soviet Medicine, New York

4:387-470 (June) 1947

Anaerobic Wound Infections. V. M. Aristovski.—p. 388.
Physiotherapy in War Injuries of Peripheral Nerves. I. Y. Tarasevich, K. M. Freidin and A. R. Shugam.—p. 391.
Treatment of Purulent Pleurisy with Gramicidin. M. I. Lavrentyeva. —p. 397.
Diagnostic Significance of Ocular Pain in Craniocerebral Trauma. T. M. Mokhova.—p. 400.
Immunization with Antigens of B. Perfringens in Lanolin. D. I. Zakharina.—p. 403.
Practical Modification of the Hirst Reaction. N. V. Nartsisov.—p. 405.
*Paths of Cancer Biotherapy. N. G. Klyueva.—p. 408.
Glucose Metabolism in Dogs with Spontaneous and Transplanted Sarcoma. N. P. Kochneva.—p. 415.
*New Data on Action of Bromine Salts on Thyroid Gland. E. N. Emelyanova.—p. 421.
In Vitro Growth of Epithelium of Pregnant Rabbit Uterus. Z. P. Zhemkova.—p. 424.
Variations in Carbonic Anhydrase for Body Regulation. E. M. Kreps. —p. 426.
Painful Stimuli in Causalgia. V. Rusinov.—p. 436.
Functional Disturbance and Pathologic Change. S. I. Frankshtein. —p. 439.

Cancer Biotherapy.—Klyueva points out that the action of the South American trypanosome Schizotrypanum cruzi was investigated in 1938 by Roskin. In a normal animal trypanosomes multiply in the heart, spleen, liver, bone marrow and lymph nodes. In an animal with a malignant growth the trypanosomes are absent from these organs and are concentrated in the neoplasm. Schizotrypanum cruzi destroys the malignant cell. First there is a degeneration of the nucleus, and then the cell disintegrates. A similar effect is produced also by killed trypanosomes. In 1939 Roskin and Klyueva prepared an endotoxin of trypanosomes killed by heating. The endotoxin had the same effect on the malignant cell as the live culture. Roskin in 1941 injected a patient with KR prepared from trypanosomes. Small doses of the preparation were harmless but caused the destruction of the new growth. These investigations, interrupted by the war, were continued in 1944. Subcutaneous, intramuscular or intratumor injections of the cancerolytic substance KR were given to patients with malignant growths and caused disintegration of the tumor. In 5 of 10 patients with laryngeal cancer the tumor disintegrated. A favorable cancerolytic effect was observed also in 3 patients with advanced cancer of the cervix, in 3 out of 5 with inoperable cancer of the breast and in 1 patient with incurable carcinoma of the lip.

Action of Bromine Salts on the Thyroid.—Emelyanova says that the department of general biology of the First Moscow Medical Institute has investigated the relationship of the thyroid gland to halogen compounds. The author is concerned chiefly with potassium bromide, the effect of which was studied in various species of animals. The thyroids of animals treated with potassium bromide showed increased activity. Transplanted thyroids of mice treated with potassium bromide induced accelerated metamorphosis of tadpoles. The experiments on tadpoles confirmed the conclusion that under the influence of potassium bromide the secretory activity of the thyroid gland is increased, as a result of which accumulation of the colloid containing hormonal principles occurs in the follicles of the gland.

Deutsche medizinische Wochenschrift, Stuttgart

72:97-144 (March 14) 1947. Partial Index

Significance of Functional Test of Respiration and Evaluation of Respiratory Mechanism for Determining Indications for Various Surgical Interventions in Treatment of Pulmonary Tuberculosis. T. Naegeli. —p. 97.
War Strumas in Children. B. de Rudder.—p. 103.
Consensual Hypothermia of Extremities in Healthy Subjects and in Those with Gunshot Injuries of Nerves. K. Gollwitzer-Meier.—p. 103.
*Intestinal Necrosis: I. Pathologic and Anatomic Aspects. E. Jeckeln. —p. 105.
*Id.: II. Clinical Aspects. C. Ruppert.—p. 108.
Present Day Problems of Tuberculosis. H. Klemm.—p. 112.
Physical Determination of Beat Volume as Test Method for Cardiac and Circulatory Function. H. Stollreiter.—p. 116.
Derivation of Monocytes and Differentiation of Three Types of Blood Monocytes. D. Tischendorf.—p. 123.

Intestinal Necrosis: Pathologic Aspects.—Jeckeln of the Pathologic Institute of Lübeck says that during the summer of 1946 a new disease was observed which was first identified in the course of necropsies. A peculiar necrotic process attacks the intestinal mucosa. The observations were made on 35 postmortem and 7 surgical specimens. Three stages are differentiated in the disease process, but death may occur in any stage. The fully developed third stage is characterized by (1) necrosis of the mucosa with a sloughing tendency, (2) penetration of the necrosis into the submucosa and the muscularis and (3) hemorrhagic edema of submucosa, muscularis and subserosa. Microscopic examination reveals thrombosis in the vessels of the submucosa, particularly where the necrosis penetrates the deeper layers. Probably the most frequent sequels of the process are hemorrhages, which may occur during the early stage. Perforation, although not to be expected during the early process, may appear at any time later and it may not be limited to one break, as many perforations may develop. The upper portion of the small intestine is usually the site of the severest involvement, but the lower part of the small intestine and even the colon may become involved. The stomach usually remains free. In mild cases healing takes place with a smooth scar.

Clinical Aspects of Intestinal Necrosis.—Ruppert observes that the onset is usually acute, with severe colicky pains usually in the upper part of the abdomen. The tongue is dry and coated; the patient refuses food. The abdominal pain is usually most severe on the left side, with increased rigidity and hyperalgesia of the skin. Meteorism exists and constipation is followed by diarrhea, with blood in the feces. *The sedimentation rate of the erythrocytes is increased; there* are leukocytosis and deviation to the left and toxic granulation. Frequently there is cutis marmorata as an indication of capillary toxicosis. Early complications include peritonitis, paralytic ileus, diplegia or tetraplegia and Landry's paralysis as the result of capillary hemorrhages in brain and spinal cord (capillary toxicosis). Late complications may take the form of adhesive peritonitis, perforation peritonitis, adhesion ileus or obstruction ileus. The etiology is still unknown, but a relationship to dysentery, cholera or arsenic poisoning can be excluded. The administration of mild laxatives, compensation for the loss of water, transfusion and support of the peripheral circulation are the usual therapeutic measures. Occasionally surgery may be necessary. The prognosis is usually doubtful, since the mortality averages about 40 per cent.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

91:1209-1288 (May 17) 1947. Partial Index

*Plaut-Vincent's Disease. H. Fermin.—p. 1223.
Diabetes and Pregnancy. B. S. ten Berge and F. J. J. van Assen. —p. 1229.
*Phrenicoclasia and Pneumoperitoneum in Treatment of Pulmonary Tuberculosis. P. Zuidema.—p. 1233.
Modern Hearing Devices. W. J. Pqthoven.—p. 1242.

Plaut-Vincent's Disease.—Fermin shows that Plaut-Vincent's angina or stomatitis may assume different forms and that the supposed causal organisms, Vincent's spirochete and Bacillus fusiformis, occur in other infections and even in normal mouths. The noninfectious gingivitis and infectious trench mouth are assumed to have a different epidemiology. Stress is *placed on the prophylactic* and therapeutic *importance of* systematic oral hygiene. Reviewing his experience as a military physician with Plaut-Vincent's disease, the author emphasizes the favorable therapeutic results he obtained with the use of lozenges containing 300,000 units of sodium penicillin in the treatment of patients with Plaut-Vincent's disease. The lozenges are left in the mouth; one usually dissolves in the course of an hour, so that about ten are required for one day. Cure was usually obtained in the cases of this disease reported by Fermin in about four days.

Phrenicoclasia and Pneumoperitoneum in Pulmonary Tuberculosis.—It was Maurer who suggested that the therapeutic effect of paralysis of the diaphragm produced by phrenic exeresis be systematically supported by pneumoperitoneum. Zuidema describes the technic of this combined treatment and presents cases to illustrate the favorable effect of this treatment in patients with pulmonary tuberculosis.

Book Notices

Human Gastric Function: An Experimental Study of a Man and His Stomach. By Stewart Wolf, M.D., Assistant Professor of Medicine, Cornell University Medical College, New York, and Harold G. Wolff, M.D., Associate Professor of Medicine, Cornell University Medical College. With a foreword by Walter B. Cannon, M.D. Oxford Medical Publications. Second edition. Cloth. Price, $5. Pp. 262, with 56 illustations. Oxford University Press, 114 Fifth Ave., New York 11, Amen House, Warwick Sq., London, E. C. 4, 1947.

This volume is an important contribution to the science of physiology and medicine and therefore is of interest to physicians. The main part of the book is a prolonged study of all phases of gastric functions (particularly on the influence of emotional states) on Tom, an adult man with complete closure of the esophogus (through accidental corrosion in childhood) and permanent gastrostomy. This is the third classic study on such patients, the earlier ones being the work on Alexis St. Martin by Dr. Beaumont and by Dr Carlson on Mr. V. The most significant new data in the present study are the changes (partly unpredictable) in gastric secretion, gastric acidity and gastric motility induced by varying emotional states. This is of particular interest to gastroenterologists in view of the increasing indications that nervous factors (mainly via the vagus nerves) are significant in the genesis chronicity and cure of gastric and duodenal ulcers. This edition includes three new chapters (v, VIII, XII). These contain further data on Mr. Tom, relevant studies on soldiers in the last war (chapters v and VIII) and a brief study on 1 peptic ulcer patient before and after sectioning of both vagus nerves at the level of the diaphragm (the Dragstedt operation for chronic peptic ulcer). This patient was also subjected to gastrostomy. The authors conclude that the vagus nerves are not necessary for the gastric hyperemia following a meal, but these nerves do carry impulses concerned in the production of gastric hyperfunction as a reaction to certain emotional states.

Whither Medicine: From Dogma to Science? By Antony Fidler, M.D. Cloth. Price, 6s Pp. 115. Thomas Nelson & Sons, Ltd., Parkside Works, Edinburgh 9, 1946.

This book purports to be a proposal for the making over of medicine into an exact science with a new system of diagnosis, prognosis, treatment and research. It is supposed to be "a closely reasoned challenge to the orthodox scheme of medical theory and practice." The author has been dozent at the University of Warsaw and is senior lecturer in medicine in the Polish School of Medicine in Edinburgh. Obviously a book designed to win converts to a new type of medicine should show clearly what is wrong with the old methods and what is very attractive and logical about the proposed new one. Actually, one reads much in this volume without getting any understanding of the writer's views. The book appears to be an example of what David Starr Jordan used to call sciosophy, or the shadow of wisdom. The text looks scientific, but when one tries to get any meaning out of it one is stumped.

Stepping Stones Towards the Future. Twenty-Seventh Annual Report of the National Bureau of Economic Research. By Arthur F. Burns, Director of Research. Paper. Pp. 91. National Bureau of Economic Research, Inc. 1819 Broadway, New York 23, 1947.

If economic history is a stepping stone to our economic future, a critical examination of the role of business cycles in the business life of the United States can prove illuminating. A business cycle is a unique historical phenomenon, but its characteristics have been substantially uniform in the long run. If depressions are becoming steadily more severe, if business cycles have undergone structural or secular changes, these trends have not become evident from the statistical records of the National Bureau of Economic Research.

Using the business cycle as a frame of reference, economists associated with the National Bureau are subjecting almost every aspect of our business life to statistical analysis. This report of the work of the National Bureau contains, in addition to the introductory remarks on business cycles and the long run economic outlook, summaries of the work now in progress in the many related fields of economic research. For example, the work going forward under Simon Kuznets, Jacob Marshak and Morris A. Copeland on various aspects of national income and the flow of money is described briefly by these men. Employment and productivity are similarly treated by Solomon Fabricant and George Stigler. Special attention is here given to the upward trend in employment in service industries. In this connection Mr. Burns cites a contrasting trend in employment in medical service: ". . . the number of physicians [in the United States] was 157 per 100,000 persons in 1900 and only 133 in 1940." Employment in government has grown twice as rapidly from 1900 to 1940 as total civilian employment. Exclusive of the armed forces and persons on relief projects, public employees rose proportionately from 4.5 per cent of all workers in 1900 to 9 per cent in 1940. By July 1946 one out of every ten employed persons was on a government pay roll.

The work on business cycles is described in great detail. Analysis of time series, cyclical movements in transportation and communications industries, in consumer goods industries and in agriculture receive specific comment. Other topics which are being studied by the members of the National Bureau of Economic Research include commodity prices and their cyclical behavior, the labor market, its wages and the changes in its size and composition, fiscal policy and banking and finance.

These progress reports can be compared to "coming attractions," and the books and monographs which will be published this year by the bureau should prove to be eminently worth while as reliable and valuable contributions to our store of economic data.

Gynaecological Endocrinology for the Practitioner. By P. M. F. Bishop, D.M., Clinical Endocrinologist, Guy's Hospital, London. Cloth Price, $2. Pp. 121, with 2 illustrations. William Wood & Co., Mt Royal & Guilford Aves., Baltimore 2, 1946.

This small handbook on the endocrine aspects of gynecology was written primarily for the general practitioner. It attempts to explain the mechanisms of the various endocrinal disorders and to suggest the use of the appropriate hormonal preparations. The author hopes thereby to dispel the mysticism of this special field and to remove the practice of medicine from the pharmaceutical companies, their publications and the detail men. To this end he discusses briefly the menstrual cycle, the various sex hormones and their administration, amenorrhea, excessive bleeding, dysmenorrhea, infertility, pregnancy and the various pregnancy tests and hormone assays. He concludes with an extensive appendix in which are listed the commercial hormonal preparations. Although the book sketches the barest details of a wide field of medical knowledge, it can be recommended to the general practitioner.

Radium Lost and Found. By Robert B. Taft, M.D., B.S., M.A. With an introduction by George E. Pfahler, M.D., Sc.D., LL.D. Second edition. Cloth. Price, $2. Pp. 158, with illustrations by Mercedes Hoshall. B.F.A. The Author, 103 Rutledge Ave., Charleston 16, S. C., 1946.

This volume is a compilation of interesting factual accounts about the loss of therapeutic radium and the search for it. Many authenticated stories are recorded relating to the ingenuity of individuals who have devised ways and means for recovering lost radium. The book was originally written by the author for private distribution among his colleagues and friends. It was so well received that the second edition was published. The book is of value to physicians, nurses and technicians who handle radium because it provides a voluminous source of ideas for any one who may be called suddenly to search for radium which has been carelessly misplaced, lost or stolen.

The 1946 Year Book of Obstetrics and Gynecology. Edited by J. P. Greenhill, B.S., M.D., F.A.C.S., Professor of Gynecology, Cook County Graduate School of Medicine, Chicago. Fabrikoid. Price, $3.75. Pp. 655, with 109 illustrations. Year Book Publishers, Inc., 304 S Dearborn St., Chicago 4, 1947.

The 1946 Year Book of Obstetrics and Gynecology is typical of the many previous editions. It contains an excellent and rather complete selection of abstracts of the year's literature in this special field. Numerous pertinent editorial comments add much to the value of the abstracts, for the author has had wide experience in obstetrics and gynecology. The Year Book is a valuable digest of current literature and can be read with profit by students and practitioners.

The Postnatal Development of the Human Cerebral Cortex. Volume III: The Cortex of the Three-Month Infant. By J. LeRoy Conel, Professor of Anatomy, Boston University School of Medicine, Boston. Cloth. Price, $12.50. Pp. 158, with 220 illustrations. Harvard University Press, Cambridge 38, Mass.; Oxford University Press, Amen House, Warwick Sq., London, E. C. 4, 1947.

This is the most important of the series of monographs on the structure and development of the cortex of infants. In the first volume the conditions at birth were described. In the second those at one month were considered. The present volume deals with the cortex at about 3 months. It is based on a thorough study of 6 normal well preserved brains. The forty most significant areas of Economo and Koskinas are described and illustrated on the basis of preparations by the Nissl, Cajal, Golgi-Cox and Weigert methods. Low power photomicrographs of the first three accompany each description together with splendid drawings of representative cell types from the pen of Miss Piotti selected from the Golgi-Cox material. In addition to these ninety-eight plates there are six plates of photographs from Weigert preparations of the more important areas. The counts of cell density and measurements of cell size are based on paraffin sections, and one would like to know how much greater the shrinkage was in the earlier stages and how it compares with the adult conditions.

In a chapter which the author modestly entitles "Comments" he presents the developmental changes found in his studies of prenatal as well as postnatal stages. He lists nine criteria of differentiation, viz. the width of the cortex and of its several layers in Nissl preparations, the size of the various cell types and the number of nerve cells per unit area, the differentiation of the Nissl bodies and neurofibrils, the form and structure of the dendrites, the appearance of artefacts like "thorns" and the development of exogenous fibers and of myelin. All these characters indicate that area FA (Brodman's area 4) leads all others in differentiation. It is closely followed by the postcentral afferent areas (PB and PC), the auditory area of the transverse temporal gyri (area TC) and the striate area (OC) in the order mentioned. It is rather surprising that the hippocampal area lags behind the others, since the hippocampus is the first region of the cortex to differentiate in development (Hines). It is to be hoped that this magnificent material will yield further details of cortical development. All concerned with the production of these beautiful volumes have earned the gratitude of those who are interested in the structure of the cerebral cortex.

Traité d'hygiène. Tomes I et II. Publié sous la direction de A. Rochaix, professeur d'hygiène à la Faculté de médecine et de pharmacie de Lyon, Lyon, P. Sédallian, professeur de clinique des maladies infectieuses et de bactériologie à la Faculté de Lyon, et R. Sohier, professeur agrégé du Val-de-Grâce, chargé des fonctions d'agrégé d'hygiène à la Faculté de Lyon. Paper. Pp. 1098, with 199 illustrations; 1099-1898, with 133 illustrations. Masson & Cie, 120 Boulevard Saint-Germain, Paris 6^e^, 1946.

This two volume "treatise on hygiene" includes in its 109 chapters not only the materials of hygiene as we know them but also those of preventive medicine, public health, sanitation and epidemiology. It is obviously written as a reference work and is well classified and indexed. The illustrations are carefully chosen and add much to the usefulness of the treatise.

Volume I includes population problems and demography, atmospheric and climatic factors, personal hygiene, infant hygiene, alimentation, rural hygiene, urban hygiene, industrial hygiene and the hygiene of transportation. Chapter III, on the causes of the depopulation of France, chapter XV, on the minimal diet, chapter XXIX, on hospitals and hospital hygiene, and section IX, on the hygiene of transportation, contain much that is new and of particular interest.

Volume II includes sections on general epidemiology, epidemiology of diseases of known bacterial causes, epidemiology of diseases of virus or unknown causes, epidemiology of parasitic diseases, "the great social scourges," and legislation, administration and organization in the field of public health and sanitation. Of unusual interest is section XIV, dealing with the measures to combat alcoholism, tuberculosis, the venereal diseases, cancer, rheumatism and abnormal heredity.

The three editors and nine collaborators in the treatise are to be congratulated on a workmanlike job well done. It is too bad that such a work could not have been dignified by cloth covers, machine cut pages and more impressive illustrations.

Dr. Samuel Guthrie, Discoverer of Chloroform, Manufacturer of Percussion Pellets, Industrial Chemist (1782-1848). By Jesse Randolph Pawling, M.D., M.A., F.A.C.P. Cloth. Price, $3.50. Pp. 123, with illustrations. Brewster Press, Trust Co. Bldg., Watertown, N. Y., 1947.

The appearance of this little volume is a very opportune contribution to the hundredth anniversary of chloroform. Samuel Guthrie moved to the neighborhood of Sackets Harbor in 1817 and first made chloroform in his private chemical laboratory there in 1831. As a citizen of this neighborhood, Dr. Pawling has utilized interviews with descendants, letters and newspaper clippings to bring to light much more information than was previously available about Guthrie and his scientific contributions. He appears to have verified Guthrie's priority in the manufacture and purification of chloroform. At the same time a brief but interesting story is told of Dr. Guthrie's commercial activities, his family life and something of the history of "Upper New York State" during the first half of the nineteenth century. The book is a worthy contribution to one phase of the history of surgical anesthesia, but in addition it should prove interesting to both laymen and physicians as a brief and well told story of significant pioneer accomplishment.

Atlas of Histopathology of the Skin. By G. H. Percival, M.D., Ph.D., F.R.C.P.E., Grant Professor of Dermatology, University of Edinburgh, Edinburgh, A. Murray Drennan, M.D., F.R.C.P.E., F.R.S.E., Professor of Pathology, University of Edinburgh and T. C. Dodds, F.I.M.L.T., F.I.B.P., F.R.P.S., Laboratory Supervisor, Department of Pathology, University of Edinburgh. Cloth. Price, $16. Pp. 494, with 376 illustrations. William Wood & Co., Mt. Royal & Guilford Aves., Baltimore 2, 1947.

This atlas is the product of cooperation between dermatologist, pathologist and experts in technic. The microscopic structures of the more frequent skin diseases are portrayed in colors with only short explanations and without any discussion of the literature. The illustrations are uniformly of a high grade of workmanship and are provided with good descriptive legends. The stain and the magnification are given in each case. Photographs are reproduced of fleas and other insects of special interest to the dermatologist. Presumably on account of their rarity in Scotland, blastomycosis and other fungous infections of the skin are not illustrated. The atlas will be an excellent guide in the study of the histopathology of the skin.

If You Need an Operation. By Richard A. Leonardo, M.D., Ch.M., F.I.C.S. Cloth. Price, $3. Pp. 198. Froben Press, 4 St. Luke's Place, New York 14, 1947.

The whole question of the value of this book lies in the point of view of the reader. It is a detailed description of surgical technics for the patient. It starts out with preparations for the operation, discussion on the procedure itself, and the aftermath. It then goes into detail about the surgery of the appendix, gallbladder, hernia, stomach, intestine, rectum, uterus, ovaries, vagina, goiter, breast, chest, brain and the urinary system. It closes with a chapter entitled "What About the Future?" which is a condensed outline of hygienic living in the postoperative era. If the doctor thinks his patient ought to have detailed information as to the operative technic, including the names of the instruments, and how many assistants the surgeon needs in the operating room, this is a good book. If the physician holds the opposite view, he will not recommend it to his patient.

The Doctor's Scrapbook. By J. W. Torbett, Sr., B.S., M.D., F.A.C.P. Cloth. Price, $2.50. Pp. 258, with 7 illustrations. The Author, 302 Houghton Ave., Marlin, Texas, 1947.

This is an interesting and revealing book which is exactly true to its name. It has no organization, plot or plan. It is full of verses and jingles which the doctor has written for his own amusement and for that of his family, friends and patients. He tells about his life, giving the most inconsequential episodes but creating out of them the impression of an earnest, kindly and sincere gentleman who has given everything he has to the practice of medicine, the service of his patients and to gracious living in a wide circle of friends and acquaintances. If the jingles and verses never reach the status of poetry, and if one does not always agree with the medical ideas expressed, one can nevertheless appreciate this book for its warm, human sincerity and the picture it gives of the kind of doctor who has patients who love and revere him through a long lifetime and far beyond.

Queries and Minor Notes

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically stated in the reply. Anonymous communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

HAY FEVER INOCULATIONS AND HEART DISEASE

To the Editor:—The question has arisen and a dispute has ensued between the allergist and the internist as to whether or not hay fever inoculations can cause heart disease and also whether or not such injections can be injurious to those who have recovered from such heart conditions.

M.D., New York.

Answer.—Inoculations with pollen to prevent hay fever do not contribute in any way that we know of to heart injury. There should be no objection to giving such injections to those who have recovered from any heart condition, provided precautions are taken to prevent an overdose of pollen, which might produce a systemic reaction. The systemic reaction may be severe. In patients with extensive heart damage from any cause such a reaction may be of greater danger than in the normal person. In addition it may be necessary to use epinephrine to counteract a systemic reaction. This might be contraindicated in older patients who have had coronary thrombosis or in patients with hypertensive heart disease.

HYPO-OVARIA

To the Editor:—The hair of a woman aged 28 is absent beneath the arms and around the pubic area. She has never menstruated. The lower measurements are greater than the upper, i. e. symphysis to toes and symphysis to head. Her stretch from finger to finger is greater than her height. She is not obese but gives one the impression of a pituitary type by her large frame and slight spacing between the teeth. Is one justified in using endocrines? I have suggested extensive studies of blood and urine estrogens and ketosteroids, but feel that the cost is prohibitive. Have you any suggestions?

M.D., Connecticut.

Answer.—From the foregoing description the patient should have had hypo-ovaria present since childhood. However, knowledge of exact measurements, development of the breasts, weight and pelvic findings would aid in confirming this impression. Whether the hypo-ovaria is primary or secondary to anterior pituitary deficiency can be determined with certainty only after considerable study. Hypothyroidism, hypoadrenocorticism and a short stature are evidence suggestive of diminished anterior pituitary function. Their absence would increase the probability of the failure being primarily ovarian, although deficiency of the pituitary gonadotropic principle alone is possible. However, short stature may be associated with a *primary* ovarian failure. Determination of the basal metabolic rate would help exclude pituitary myxedema, but hypoadrenocorticism can be excluded with certainty only by the finding of low 17-ketosteroid excretion and a negative reaction to a "water test." However, if the patient is vigorous and strong and does not have abnormal pigmentation of the skin or mucous membranes, hypoadrenocorticism is unlikely. Pituitary tumors such as craniopharyngioma are frequently a cause of hypopituitarism; their exclusion may be aided by roentgenograms.

The assay for gonadotropins of several twenty-four hour specimens of urine collected at intervals of four to seven days would be the best single method for differentiating primary from secondary hypogonadism. In primary ovarian failure there is a normal or increased urinary excretion of gonadotropins, while in failure secondary to pituitary deficiency the excretion is diminished. Criteria for normal excretion vary with the laboratory and the method used for estimation.

Treatment for hypo-ovaria is generally considered to be unsatisfactory. If the epiphyses are closed, nothing can be done to change bodily proportions. It would be extremely unlikely that a normal menstrual cycle could be induced in this patient by any endocrine therapy. No preparation of pituitary or pituitary-like hormone capable of stimulating the human ovary to produce estrogens and progesterone in anything like a normal manner is available. Therefore for purposes of therapy it matters little whether the patient has primary or secondary hypo-ovaria. The treatment is the same in the two instances, by "endo-organ" therapy.

Administration of estrogens with or without progesterone in a cyclic manner may produce uterine bleeding. Whether this is desirable depends on the preference of the patient. A feeling of increased well-being may result from the administration of estrogens, and a trial of such therapy should be carried out.

ACHLORHYDRIA

To the Editor:—What is the present day concept of the absence of free hydrochloric acid in the gastric juice? Are people who eat vegetable diets (raw) more apt to have achlorhydria than those who eat meats? Should a man aged 50, entirely free of gastric symptoms, be given diluted hydrochloric acid? Is achlorhydria associated with presenile arteriosclerosis? Any information on the general subject of achlorhydria gastrica will be appreciated.

M.D., District of Columbia.

Answer.—There is no evidence to suggest that the ingestion of vegetables may produce achlorhydria or that meat in the diet prevents it. A person aged 50 years, free of gastric symptoms, should not be given diluted hydrochloric acid. It has been shown that in the ordinary dosages of 10 to 15 drops three times daily diluted hydrochloric acid does not increase the p_H of the gastric juice to any appreciable degree. Therefore it is unlikely that any rationale exists for administering the acid to any patient, regardless of symptoms or degree of acidity. An exception may be made for psychotherapeutic reasons.

Achlorhydria is construed to be synonomous with anacidity after histamine stimulation (0.1 mg. to 10 Kg. of body weight). This condition occurs in approximately 10 per cent of the general population, somewhat more often in the older age groups, 60 per cent in patients with gastric carcinoma, and in all cases of pernicious anemia. In 100 consecutive cases of gastric anacidity, Bloomfield found 54 asymptomatic.

Although presenile arteriosclerosis and anacidity may be occasionally concomitant, evidence to show a causal relationship is absent.

There does, however, seem to be some relationship between the development of anacidity, atrophic gastritis, pernicious anemia and gastric carcinoma. This is supported by (1) the observation that atrophic gastritis, demonstrated both gastroscopically and by histologic section, occurs with great frequency in pernicious anemia; (2) gastric carcinoma is sometimes preceded by atrophic gastritis; (3) gastric carcinoma occurs more frequently in patients with pernicious anemia than in the general population. On the other hand (1) many patients with carcinoma of the stomach have an otherwise normal gastric mucosa; (2) atrophic gastritis is frequently a transient finding, with normal acid secretory power of the gastric mucosa; (3) numerous achlorhydric patients are entirely asymptomatic and never develop atrophic gastritis, pernicious anemia or gastric carcinoma.

Gastric achlorhydria (histamine anacidity) is not a disease entity and does not require treatment per se. When the condition is demonstrated, effort should be made to rule out the presence of pernicious anemia and gastric carcinoma.

AMINO ACIDS FOR ARTHRITIS

To the Editor:—A patient claims that amino acids have aggravated an arthritic condition. Can you give me any information? I have been unable to find anything definitely for or against this theory.

Louis L. Sherman, M.D., Oakland, Calif.

Answer.—It is impossible to answer this question adequately because the correspondent did not state what kind of arthritis the patient had, what was the nature of the supposed articular aggravation, how long after the administration of the amino acids the aggravation occurred, what preparation of amino acid was used and how it was given, and whether or not the patient was an allergic individual.

In 1943 Carlström and Lövgren of Stockholm recommended the treatment of "chronic polyarthritis" with adenosine triphosphoric acid: of 17 patients so treated fifteen "were definitely improved or recovered." Adenosine triphosphoric acid was found to be superior to muscle adenylic acid. Further studies were reported in 1945 by Lövgren. This work has not yet been confirmed. Reports by American workers on the use of amino acids for chronic arthritis have not been found.

In rheumatoid arthritis the total serum proteins are generally normal in amount; the fibrinogen is generally increased; the serum globulin is normal or slightly increased; the serum albumin is normal or slightly decreased, occasionally slightly increased; the albumin-globulin ratio is generally reduced below normal values.

TIME OF HEALING OF FRACTURES

To the Editor:—For the past five years I have noted a tremendous increase in the time it takes for fracture to heal. If this had been in old people particularly I would not have been so surprised, but it has occurred just as much in the young and middle aged. One youngster, aged 12 years, had a simple fracture of the middle third of the tibia. It took from September 1 to January 1 to heal. I had a talk with the roentgenologist, who states that it had also been observed in other hospitals. Has there been any comment in the current literature about this? Have there been any studies on this subject?

M.D., Pennsylvania.

ANSWER.—There has been no change in time required for the uniting of fractures recorded in surgical reports.

Certain factors lead to longer periods of healing time of fractures. In children fractures usually unite quickly and promptly —a fractured femur in a newborn infant may have a firm abundant callus in a week. Other factors at any age, such as poor general health, malnutrition, insufficient activity, calcium and phosphorus deficiencies in disease or senility, local interpositions and insufficient reduction and immobilization may alter the healing time. Operative intervention may influence the healing time, in some instances hastening it because good reduction is obtained, in other instances delaying it because of loss of normal blood extravasation about the fracture evacuated at operation or as the result of electrolytic action of implanted metals, or infection.

There is also a difference of healing time in different persons. The case of the child cited may have been governed by one or many factors involving the child's state of health and the method of treatment applied. Incised operative wounds do not all heal by first intention; some become keloid, some break open or even ulcerate. Bone wounds, although buried in tissue, go through similar variations, but the average normal rate of healing remains as it has always been when not interfered with.

The correspondent may also consider the difference between clinical healing with a satisfactory palpable or supporting callus which permits starting use and function and healing as demonstrated roentgenologically, which requires a much longer time before there is full calcified cementing callus between fragments. Possibly he is now using x-ray examination to a greater extent to determine full and final bony union; hence the apparent lengthening of time for uniting.

References:

Speed, Kellogg, and Fell, E. H.: Temperature Controlled Healing of Experimental Fractures, *J. Bone & Joint Surg.* **21:** 1005 (Oct.) 1939.

Speed, Kellogg: Delayed Union of Bone, *Surg. Clin. North America*, February 1941, p. 245.

HAZARDS OF TRICHLORETHYLENE

To the Editor:—I should like some information on trichlorethylene when used as a degreasing agent. How much vapor is created on exposure to air? (The tank is uncovered.) How toxic is the material to a person in a room that is about 35 feet square with a 12 foot ceiling if he is at the opposite end of the room and also within eight feet of it? There is no exhaust fan in the room. What possible diseases can be contracted when exposed to these fumes?

Jack G. Lustgarten, M.D., Merrick, L. I., N. Y.

ANSWER.—Too many factors are involved in this situation to permit categorical answers to the questions. The amount of vapor evolved will depend on the adequacy of the water jacket around the degreaser, the size of the degreaser, the volume of trichlorethylene involved and the temperature utilized. A single milligram of trichlorethylene entering the air will produce 187 parts of vapor in a million of air, which is just about the beginning of the harmful zone (200 parts per million being the maximum permissible concentration for sustained exposure under the American Standards Association code). Only a few milligrams of trichlorethylene continually thrust into the atmosphere could lead to undesirable exposure. The fact that the tank is uncovered is not highly significant if the tank is water jacketed for condensation purposes. However, experience has shown that many large tanks require exhaust systems for reasons of protection in addition to the water jacketing. Just how toxic trichlorethylene may be to someone working in a room of the dimensions specified depends entirely on the quantity of vapors emitted by the degreaser with due consideration for dilution in the work room atmosphere. Should there be sufficient exposure, trichlorethylene poisoning may arise, which in its mildest form may be characterized by nausea and vomiting and in severer form by significant damage to the liver and kidneys. A proper procedure under the circumstances is to procure laboratory determination as to the concentration of trichlorethylene vapors at various places in the work room and under various circumstances. The Industrial Hygiene Bureau of the New York Department of Labor is well equipped and experienced to make determinations of this character.

TREATMENT OF NEUROSYPHILIS

To the Editor:—Please given an evaluation of tryparsamide in the treatment of neurosyphilis and at the same time let me know whether the use of mapharsen appears to be more advisable in combination with bismuth as follow-up treatment after fever treatment than tryparsamide and bismuth.

Werner Lonsen, M.D., Chicago.

ANSWER.—The consensus of most syphilologists at present is that tryparsamide is of little or no value in the treatment of neurosyphilis and that whatever value it has is more than overshadowed by the risk of damage to the optic nerve and vision. The drug has been abandoned in many large syphilis clinics in the country for the last several years.

As to the relative merits of mapharsen plus bismuth and tryparsamide plus bismuth as follow-up chemotherapy after the fever treatment of neurosyphilis: the latest available evidence indicates that fever therapy alone without following chemotherapy with any drug accomplishes almost as much as with such chemotherapy. This is certainly true if by "fever therapy" the inquirer means induced tertian malaria, which is the most desirable form of fever treatment. The most recent information is to the effect that fever therapy (induced tertian malaria) combined with the simultaneous administration of penicillin will accomplish as much in the several types of neurosyphilis and within a period of five weeks as was previously accomplished by fever therapy with two to three years of following chemotherapy. This suggestion, if backed by further evidence, will mean an enormous saving of time and expense to the average patient with neurosyphilis.

EFFECTIVENESS OF BOOSTER DOSE OF TETANUS TOXOID

To the Editor:—What is the maximum lapse of time between injections of tetanus toxoid that a booster dose will be effective?

M.D., Providence, R. I.

ANSWER.—It is supposed that basic immunity (the ability of the body to respond to a booster dose of tetanus toxoid) is lifelong. However, the available data indicate that a patient will produce tetanus antitoxin in response to a booster dose of tetanus toxoid as long as five to six years after initial immunization with tetanus toxoid. The maximal duration of basic immunity is the subject of long-term study in several American clinics, and the results will be reported from time to time.

The response to tetanus toxoid is characterized by four features: 1. Acceleration: A high level of antitoxin appears in seven days or less, thus providing adequate immunity in the event of short incubation periods. 2. Augmentation: The antitoxic level after the booster dose is remarkably increased, sometimes to levels as high as fifty to one hundred times those present at the time of recall injections. 3. Prolongation: The duration of antitoxic immunity is more persistent than that evoked by the previous injections. 4. Facilitation: The body responds to minute doses of tetanus toxoid. Thus, a recall injection of but 0.1 cc. (fluid or alum precipitated tetanus toxoid) elicits a satisfactory immunologic response.

There are circumstances under which antitetanic serum (passive immunization) has been recommended instead of a booster dose of tetanus toxoid (active immunization). In the presence of severe hemorrhage, poor general health, diseases of a debilitating nature, severe or multiple injuries or delay in the injection of tetanus toxoid, the use of adequate doses of antitetanic serum (10,000 or more units) is justified. There is a difference of opinion concerning this particular problem, so that failure to employ tetanus antitoxin under these circumstances cannot be interpreted as an act of negligence.

ROUTE OF INFECTION IN VIRAL PNEUMONIA

To the Editor:—What is the consensus regarding the primary infection of viral pneumonia other than through the upper respiratory system? Are there any cases on record in which it is thought that viral pneumonia was contracted by entry of the virus through the skin from insect bites?

T. A. Taylor, M.D., Lufkin, Texas.

ANSWER.—The epidemic forms of viral pneumonias and the pneumonias of influenza, measles and chickenpox are acquired chiefly, if not always, by the airborne route. Hand to mouth infection and infection from dishes or other articles soiled with exudate from patients also may be possible. If the pneumonias of the psittacosis group of agents are considered as viral pneumonias, the rare pneumonia of venereal lymphogranuloma, a member of the group, may be venereal in origin. There are no cases on record in which pneumonias were proved to arise from infections by way of the skin. Transmission by insects was suspected in a group of cases among American soldiers stationed in India, but the idea was abandoned for lack of evidence.

The Journal of the
American Medical Association

Published Under the Auspices of the Board of Trustees

Vol. 135, No. 4 Chicago, Illinois September 27, 1947

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CANCER OF THE UTERUS

EMIL NOVAK, M.D.
Baltimore, Md.

The problem of gynecologic cancer, as represented most conspicuously by cancer of the uterus, is only one aspect of the general problem of the disease which has so long challenged the members of the medical profession. Great advances have of course been made, but the grim citadel of cancer still looms ahead, not untouched but certainly not conquered. Until the latter part of the last century the brunt of the attack had been borne by clinicians, but with the developments which flowed from Virchow's establishment of cellular pathology reinforcements then came from the ranks of the pathologists. It was not long before pathologists became familiar with those microscopic characteristics of cancer which explain its destructive clinical course. These new concepts were promptly applied by surgeons in their elaboration of the surgical attack on the disease, which had to take cognizance of such attributes of cancer as infiltration and extension, lymphatic invasion and metastatic dissemination.

In the immediate problem of uterine cancer as well as in other surgical aspects of cancer much was accomplished, and innumerable patients were saved who previously would have been doomed. But a limit was finally reached beyond which surgical procedures could not go. This restrictive barrier still confronts the surgeon today, in spite of the relatively minor improvements made possible by such modern surgical adjuvants as transfusion, chemotherapy and antibiotics. I do not believe that any gynecologist who passed through the early days of radical surgical intervention for cancer could have experienced any great enthusiasm for it, even though it was the only method available to him for the salvage of at least a fraction of his patients.

Small wonder, therefore, that the advent of radium was welcomed, first as an agency for palliative therapy, later as an alternative primary weapon of attack. Thus the brilliant discovery of radium by the Curies in the field of physics found a life-saving application in the treatment of human disease, another of the innumerable illustrations of the interdependability of all branches of science. In the treatment of uterine cancer a full generation has been devoted to the evaluation of the relative importance of surgical procedures and radium therapy, and the final answer has not yet been reached. The problem has been a much more difficult one than the appraisal of certain other modern weapons in the treatment of disease, such as insulin or chemotherapy. The nature of cancer, with its long and varied clinical course; the imperfections of standardization in histologic and clinical studies; the difficulties and the long years required to test the efficacy of various plans of treatment, all these have made the process of crystallization of opinion and practice exceedingly slow indeed.

But in the meantime the warfare on cancer in general has assumed the all-out proportions of that characterizing the belligerent nations of World War II. All the forces of science have been marshaled against it—clinicians, chemists, biologists, biochemists, physicists, endocrinologists, geneticists, plant pathologists and workers in still other fields. The chief objective has been determination of the cause of the disease, but it is not impossible that a cure may be found before the cause is discovered. In spite of the great accomplishments of both surgical practice and radiotherapy, many surgeons must consider that these are weapons of expediency, temporary makeshifts which must be utilized to the fullest possible extent until some more direct and more fundamental weapon, some atom bomb of cancer therapy, is made available.

The purpose of this paper is a survey of the cancer problem from the camp of the gynecologists, who have long been among the shock-troops in the anticancer warfare. It will be concerned more particularly with the immediate problem of cancer of the uterus, the most important one confronting gynecologists today. Its importance is illustrated by the fact that no less than 17,152 women died of this disease in 1944, the last year for which complete figures are available. That no conspicuous impression has as yet been made on mortality due to cancer is indicated by the fact that the total deaths from this cause in 1941 numbered 16,516, with 16,393 in 1942 and 16,968 in 1943. Furthermore, cancer has advanced to second place as a cause of death in the United States, being topped only by cardiac disease. Since this is not to be a statistical paper it includes no discussion of various qualifying factors, such as the fact that life expectancy has been so greatly increased in the present day that a much larger proportion of persons reach the cancer age than formerly. Even with such ameliorating considerations the facts on the incidence and mortality of cancer are bad enough to constitute a continuing challenge.

Since this discussion is directed to the general practitioner as well as to the gynecologist, it has seemed best to subdivide it as follows: (1) a brief comment on cancer research, especially as it bears on pelvic cancer in women; (2) newer developments in the pathologic study of uterine cancer; (3) newer methods of diagnosis of uterine cancer, and (4) the present status of treatment. It is obvious that any attempt to survey

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Read in the General Scientific Meetings at the Ninety-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., June 10, 1947.

such a vast field must be in the nature of a summary and that it is open to the criticism of the individual factor in evaluation, though this will be avoided as far as possible.

RESEARCH IN CANCER

This is not the place, nor am I qualified, to review the far flung studies directed toward a solution of the riddle of cancer, for riddle it still is in spite of the efforts of so many able investigators on so many different fronts. Nor are there many who can envisage the whole problem in all its aspects. However, there are a few observations which seem justified as to general trends in the concept of the nature of cancer, and a few which seem especially pertinent to the immediate problem of uterine cancer.

There is a growing conviction that the cause of cancer is intracellular, rather than an extrinsic factor such as a virus. The somatic mutation which changes the normal body cell to the cancer cell, however, is not completely independent of extrachromosomal factors. In spite of the enormous amount of investigation on the metabolism and growth characteristics of cancer cells as contrasted with normal cells, pathologists are still completely in the dark as to the inciting factor which transforms the well behaved normal cell into the gangster cell of cancer. Whether this mutation affects a single cell or considerable groups of cells is not certain, but the latter seems more probable in view of the occurrence of multicentric and multiple growths.

For many years pathologists have insisted that cancer is not a single disease but a whole group of diseases. Certainly there are wide variations in histologic type, and certainly there are differences in the mechanism of production of different cancers, but it is difficult to avoid the impression that a common denominator does exist. When any one variety of cancer is really completely explained, the pieces of the whole jigsaw puzzle will probably fall quickly into place.

As to such factors as heredity, one does not have to accept the much criticized observations of Maud Slye to feel that the genetic factor must be of great importance in the transmission not of cancer but of predisposition to cancer from one generation to succeeding ones. Even sharp critics of Slye's conclusions are apparently willing to concede this, though there still exist differences in opinion as to the relative roles of genetic factors, and of such extrinsic factors as chronic irritation, whether traumatic, inflammatory or hormonal. The genetic predisposition is apparently so strongly developed in some persons that cancer will arise even without any extrinsic irritation. In others it is less well defined, so that the predisposition plus an extrinsic factor is necessary for the development of the disease. Finally, the genetic factor in still other persons is so weak that cancer is unlikely to develop regardless of the degree of local irritation. It would be difficult to convince any clinician of large experience that heredity plays no part in cancer and that the relatively frequent instances of familial tendency toward cancer are to be explained entirely on the basis of coincidence. Macklin's convincing statistical studies[1] have given him strong support for his views.

The previous statements have an application to the clinical problem of cancer of the cervix. For many years gynecologists have been taught that chronic irritative lesions of the cervix predispose to the development of carcinoma, and this is still the prevailing view. However, a surprisingly large proportion of early cancers, in these days of intensive search for early lesions, have been found in cervices which grossly are normal or nearly normal. This, as a matter of fact, has been my own experience. But this does not negate the possible contributory role of chronic irritative lesions. It merely suggests that in certain persons the genetic predisposition to cancer is so strong that cancer develops without the contributory influence of chronic irritation.

HORMONES

Of especial interest to the gynecologist are the provocative studies of recent years as to the possible role of the ovarian hormones in carcinogenesis. As far back as 1918 Leo Loeb[2] concluded that the endocrine glands may be of importance in the development of cancer in those organs and tissues which are normally under the physiologic control of the ovarian hormones. This would obviously apply to the genital tract and the breast. After all these years this general statement still seems to be a valid one. The investigations of Lacassagne (1932),[3] which described the production by estrogens of mammary carcinoma in male mice of cancer susceptible strains, were the starting point of a long series of experimental studies on the carcinogenic effect of estrogens on the breast. While cancer has been produced in certain animals and strains, there would seem to be justification for the general conclusion that such results are not, as Gardner says, to be attributed to any chemical specificity for mammary carcinogenesis that cannot be associated with their estrus-producing capacity.

As regards carcinoma of the uterus, it does not seem to have been possible to produce actual carcinoma of the endometrium by means of estrogen therapy, though simple hyperplastic conditions are readily enough produced. The interesting studies of Lipschütz on the remarkable fibromatogenesis following the administration of estrogen in the guinea pig do not appear to be applicable to the problem of cancer or, for that matter, even to that of the cause of uterine myoma. More successful have been the experimental efforts to produce malignant epithelial growths in the cervix, especially in mice, as reported by Gardner and his associates.[4]

There has been much discussion as to the possible carcinogenic hazard to the human subject of the estrogen therapy so widely prevalent and so often abused. I believe it may still be said that no case of human cancer has been recorded in which the evidence for an estrogenic causation is unimpeachable. It is true that several cases of mammary and at least 1 case of endometrial carcinoma have been reported in patients who had received such therapy, but it is difficult to exclude the *post hoc ergo propter hoc* factor in evaluating such evidence. Moreover, patients have received enormous estrogen dosage, as much as many millions of units, without the development of cancer. However, so long as there is the slightest uncertainty on this point, and in view of the carcinogenic effects of estrogen in at least some animals and tissues, estrogen therapy should be held to a minimum or avoided altogether in patients who because of heredity or through the existence of some other factor may be considered to possess a predisposition to the disease.

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[1] Macklin, M. T., in Symposium on Cancer, Madison, University of Wisconsin Press, 1938, p. 32.

[2] Loeb, L. J.: M. Research **40:** 477, 1919.

[3] Lacassagne, A.: Compt. rend. Acad. d. sc. **195:** 630, 1932.

[4] Gardner, W. U.; Allen, E.; Smith, G. M., and Strong, L. C.: Carcinoma of the Cervix of Mice Receiving Estrogens, J. A. M. A. **110:** 1182 (April 9) 1938.

A number of clinical observations seem to bear on this point. For example, Crossen and Hobbs[5] have called attention to the fact that a late menopause seems to be a predisposing factor to uterine adenocarcinoma. Again, Corscaden and Gusberg,[6] as well as Randall,[7] reported that the later incidence of adenocarcinoma among women who had previously been treated for functional menopausal bleeding was found to be three and a half times that occurring in other women. Finally, the possible predisposing influence of postmenopausal hyperplasia of the endometrium has been stressed by Novak and Yui,[8] Taylor[9] and others. All these observations are a basis for the assumption not that the estrogenic factor is actually the cause of cancer but rather that the estrogenic stimulation, like any other irritation, is of importance only when superimposed on the still unknown genetic factor.

NEWER POINTS OF VIEW ON PATHOLOGY

For many years the term precancerous has been used by clinicians, but not always with the same meaning. Some applied it to lesions which were thought to be merely predisposing, such as chronic irritation of the cervix. Since the vast majority of such lesions never become malignant, and since their predisposing role is questioned by some, such use of the term precancerous is obviously loose and undesirable.

Others, however, have employed this designation to indicate those lesions which histologically are of borderline type and which therefore offer great difficulty in microscopic diagnosis, with frequent differences of opinion among pathologists. However, they have always insisted that these lesions are not to be considered as representing stepping stones between benign and malignant lesions but that they either are or are not cancer, though one may not always be able to make a sharp distinction by use of the microscope.

It is probable that this point of view is still valid. The actual conversion of a body cell to one with the characteristics of full-fledged cancer, including invasiveness, is probably a brief process. Unfortunately, however, the histologic appearance of the actually cancerous cell may be identical with its appearance before it assumes invasive propensities. This is exemplified in the lesion which, under such designations as preinvasive carcinoma, intraepithelial carcinoma, carcinoma in situ and Bowen's disease of the cervix, has excited so much interest and discussion among gynecologists in the past. It had been described by Schauenstein[10] as far back as 1907 and by Pronai[11] in 1908, while Schottländer and Kermauner[12] in 1912 had called attention to the fact that such a preinvasive cancer zone is often seen at the margin of frankly invasive carcinoma.

Schiller,[13] however, deserves the chief credit for recognizing the importance of this preinvasive type of lesion as the forerunner of those which alone had in the past been considered cancerous, i. e. those which showed similar intraepithelial changes plus histologic evidence of invasion. The fact that he flatly called such lesions *beginnendes Karzinom* created no little controversy, since such a concept meant that one could no longer insist on either clinical or histologic invasiveness as essential to the microscopic diagnosis of carcinoma, basing this on the characteristics of individual cells alone. The confusion was all the greater because the follow-up study showed that in at least a small number of cases genuine invasive cancer developed later, though perhaps not for many years. In all, however, the total number of such cases available in the literature is still extremely small. The interest and the controversy engendered by Schiller's observations served an invaluable purpose in that they stimulated in all clinics a much more intensive search for very early cancer, and particularly for stages of the disease antecedent to histologic invasiveness. In the laboratory with which I am associated, for example, among 88 case specimens in November 1926 there were only 5 cervical biopsies. In the corresponding month of 1936 there were 31 cervical biopsy specimens among a total of 127 case specimens. But in November 1946 the number of cervical biopsy specimens had risen to 244 in a total of 401. There was a corresponding rise in the proportion of specimens from diagnostic curettage.

There has been a similar multiplication of cervical biopsies in most other clinics. The biopsy specimens of an earlier day were for the most part taken for the confirmatory diagnosis of lesions concerning which there was little clinical doubt. Now the majority of biopsies are done when accurate clinical diagnosis would be impossible otherwise, and in many instances the cervix presents an essentially normal appearance. This is a happy augury for the future, and already the yield in demonstrating extremely early unsuspected cancer as well as preinvasive lesions has fully justified this intensive concentration on the cervix. In this clinic many early and preinvasive lesions have been found, and a considerable group of these have been recently reported by Te Linde and Galvin.[14] These authors have emphasized that when preinvasive lesions are found, further study of repeated biopsy specimens or of tissues obtained after either partial or complete removal of the cervix, or after hysterectomy, will almost always show definite invasiveness at some point or other, though there are some exceptions.

The impression which one gets from such observations is that cancer of the cervix may be a disease of extremely long duration, extending over perhaps as much as fifteen or twenty years, if both preinvasive and invasive stages of the disease are included. Many gynecologists, including myself, have in the past expressed doubt as to whether one could properly designate as real cancer the preinvasive lesion, which certainly possesses none of the clinical characteristics of cancer and which in this stage should be readily curable by simple excision. And yet there are few who have doubted that it is clearly related to cancer, repr at least a precursory stage. There are man angles of the subject which might be discussed, but I believe the available evidence at this time justifies the following conclusions, tentative though they must be:

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[5] Crossen, R. J., and Hobbs, J. E.: J. Mississippi M. A. **32**: 361, 1935.

[6] Corscaden, J. A., and Gusberg, S. B.: Am. J. Obst. & Gynec. **53**: 419, 1947.

[7] Randall, C. L.: Recognition and Management of Woman Predisposed to Uterine Adenocarcinoma, J. A. M. A. **127**: 20 (Jan. 6) 1945.

[8] Novak, E., and Yui, E.: Am. J. Obst. & Gynec. **32**: 674, 1936.

[9] Taylor, H. C., Jr.: Am. J. Obst. & Gynec. **23**: 309, 1932.

[10] Schauenstein, W.: Arch. f. Gynäk. **85**: 576, 1908.

[11] Pronai, K.: Arch. f. Gynäk. **89**: 596, 1909.

[12] Schottländer, J., and Kermauner, F.: Zur Kenntnis des Uteruskarzinoms, Berlin, S. Karger, 1912.

[13] Schiller, W.: Arch. f. Gynäk. **133**: 211, 1928.

[14] Te Linde, R. W., and Galvin, G.: Am. J. Obst. & Gynec 1944.

1. Preinvasive carcinoma is, as Schiller has maintained, actually the beginning stage of cervical carcinoma.
2. Cervical cancer, by this concept, may have a long history, divisible into two stages. The preinvasive stage is of extremely variable length; there may be no later development of clinical cancer, the patient dying of some other disease perhaps many years after the observation of the preinvasive lesion. The second stage, characterized by the break-through of the carcinomatous cells into the lymphatic vessels because of penetration of the basement membrane, marks the beginning of the clinically malignant stage of the disease.
3. During the preinvasive stage cancer is entirely benign clinically and is curable by simple complete excision.
4. When preinvasive cancer is revealed by cervical biopsy, further study will usually show definite invasiveness at some point, stamping the disease as genuine early cancer in its traditional sense.

In the body of the uterus as in the cervix one may encounter lesions which histologically if not actually present all stages of transition between obvious benign hyperplasia and adenocarcinoma. The term hyperplasia has always applied to the so-called Swiss-cheese pattern, which microscopically presents not the slightest resemblance to adenocarcinoma. Nor does it have any tendency toward malignant change during reproductive life, although some, including myself, believe that when it occurs as a result of postmenopausal estrogenic stimulation of the endometrium it may predispose toward malignant disease. The evidence for this has been presented in a paper by Novak and Yui.[8]

However, there is another hyperplastic condition of the endometrium, sometimes occurring only in limited areas of a Swiss-cheese endometrium but at times diffuse, which presents great difficulty in diagnosis and in which mistakes are often made. In this atypical variety of hyperplasia the epithelial and gland tissues show such decided proliferative and adenomatous change that the simulation of adenocarcinoma may be indeed striking. I have been much interested in these histologically borderline lesions, and Rutledge and I[15] have recently studied a considerable series of them. The crucial question whether such lesions are benign or malignant is what happens to the patient when only the most conservative treatment is employed, treatment admittedly totally inadequate for carcinoma.

We[15] have been able to show that many histologic conditions which are often diagnosed as adenocarcinoma are really only benign but highly proliferative atypical hyperplasias, which can be cured by the same simple measures applied to the ordinary Swiss-cheese variety. While experience will make one quite confident as to the correct diagnosis in the more moderate degrees of atypical proliferative hyperplasia, it has not been possible to draw any sharp histologic line between the extreme proliferative hyperplasias and real adenocarcinoma. As stated earlier in this paper, there is some point at which the cancer mutation takes place, but it is not always easy to determine this point histologically; hence, in the extreme degrees of atypical hyperplasia, with decided glandular atypia, epithelial overactivity and stratification, the simulation of adenocarcinoma is so perfect that one cannot, in the present state of clinical knowledge, afford to take the hazard of conservative treatment.

It is in regard to this disturbing group of cases that I have often quoted Josef Halban, an excellent pathologist as well as gynecologist, who, when I showed him such a slide during a visit to this laboratory, shrugged his shoulders and said *"Nicht Karzinom aber besser heraus!"* Since this entire group of cases has been fully described, with correlated clinical study, in the previously mentioned paper by Rutledge and myself, I shall not elaborate further on it here. We consider the subject of great importance not only in determining the fate of many individual patients but also in the vitiation of adenocarcinoma statistics and cure rates which results when benign lesions of this general group are incorrectly included as carcinomas.

NEWER METHODS OF DIAGNOSIS

Little need be said as to the method of colposcopic examination introduced by Hinselmann in 1927, because it has sharp limitations and it has never achieved any wide vogue in this country. It was, however, extensively employed in many European clinics and for that matter it is still employed in not a few, as attested by the recently published monograph of Wespi[16] from the Zurich Clinic in Switzerland. Those who have tried it know how time-consuming it is and will probably agree that it is valuable only as a screening method in ostensibly normal women.

Somewhat the same comment can be made concerning the tinctorial test of Schiller, which likewise has apparently been abandoned in most clinics. There seems to be general agreement that it has little value other than in suggesting promising points for biopsy in the search for exceedingly early stages of cancer in which there is no gross lesion. It is possible that it may be of some value in the cancer detection clinics, which deal with supposedly normal women, although most of them appear to have discarded the method. Not much will be revealed by the Schiller test that will not be apparent through minute examination of the cervix in the best possible light.

Still another diagnostic adjuvant has been much discussed since 1943, when Papanicolaou and Traut[17] published their monograph on the study of vaginal smears in the diagnosis of uterine cancer. They established beyond doubt that cancer is an exfoliative lesion and that it is possible to make the diagnosis of cancerous cells in the vaginal smear. A number of other authors, especially Meigs and his co-workers,[18] Warren and Gates[19] and Ayre,[20] have confirmed these observations. Here again there are certain limitations, the chief one being that only an expert cytologist can be expected to make reliable diagnoses from the single cells or small clumps of cells scattered in the multiform elements of the vaginal exudate. Even those most enthusiastic concerning their own results agree that for the present this diagnostic method cannot take the place of biopsy in the decisive diagnosis of cancer. Its chief function may prove to be that of a screening test in the search for cancer in large numbers of ostensibly normal women. One may perhaps dream of a day when women will be educated to send in vaginal smears to a central agency, perhaps a State Department of Health, manned by a battery of trained cytologists qualified to pass judgment on the specimens.

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[15] Novak, E., and Rutledge, F.: Am. J. Obst. & Gynec., to be published.

[16] Wespi, H.: Entstehung und Früherfassung des Portiokarzinoms, Basel, Benno Schwabe, 1946.

[17] Papanicolaou, G. N., and Traut, H. F.: Diagnosis of Uterine Cancer by Vaginal Smear, New York, Commonwealth Fund, 1943.

[18] Meigs, J. V.; Graham, R. M.; Fremont-Smith, M.; Kapnick, I., and Rawson, R. W.: Surg., Gynec. & Obst. **77:** 449, 1943.

[19] Warren, S., and Gates, O.: Am. J. Path. **21:** 567, 1945.

[20] Ayre, J. E.: Am. J. Obst. & Gynec. **51:** 743, 1946.

All these diagnostic aids have served a useful side purpose in that they have kept the minds of investigators focused on the search for decidedly early and therefore therapeutically highly favorable stages of cancer. The more cancer-conscious patients and physicians can be made on this point, the more the cancer cure rates will improve.

Biopsy still remains the one decisive diagnostic procedure, as it has been since Ruge and Veit more than sixty years ago established its value against the opposition of some of the outstanding gynecologists of the day. The criticism that it may result in dissemination of cancer cells is still often expressed, but the evidence for this has never been impressive. In fact a number of studies, such as the one of Wood[21] in 1919 and the recent one of Maun and Dunning,[22] present strong evidence against the supposed hazard of biopsy.

PRESENT STATUS OF TREATMENT

The treatment of cancer of the uterus, either cervical or corporeal, was practically stereotyped up to the advent of radium. The gynecologist had merely to decide whether the case was to be put into the operable or inoperable group, and in this decision it is easy to understand that the personal equation was an important one, based in no small measure on the conservative or radical tendencies of the gynecologist.

In cervical cancer there were some who considered operative intervention justified only in cases in which there was little or no infiltration of the vagina or broad ligament and no fixation of the uterus, and in which, therefore, the technical difficulties of the radical operative procedure did not seem too great. The general as well as the local conditions were taken into consideration then as now, so that a patient who was old and debilitated or decidedly obese, or who suffered with some serious general disease such as nephritis, myocarditis or diabetes, would probably be consigned to the group for palliative treatment. The gynecologist who was guided by such conservative considerations would select for operation only those cases in which there seemed to be (1) a reasonably good chance for cure and (2) and an excellent chance that the patient would pass safely through the ordeal of the extensive radical procedure which alone offered the possibility of cure but which carried with it a high rate of immediate mortality.

His bolder and more radical confrère would greatly extend the indications for operative intervention and contract the limits of such contraindications as have been mentioned, with the thought that such a fatal disease as cancer justified subjecting the patient to a greater hazard than would result from less serious elective procedures. Such a surgeon might operate on as many as 50 per cent of the patients with cancer, which was an extremely high figure when one considers the scarcity of really early lesions observed in those days. He would not infrequently come to grief, and those who remember the early days of radical operation will recall not only the technical difficulty involved in trying to eradicate a disease often much more extensive than had been anticipated but also the feeling of discouragement and futility which such cases so often left in the minds of the operator. The immediate mortality, even in the hands of the most expert surgeons, was expected to be high. For example, that of Wertheim, who devised the radical procedure which bears his name, was 12 per cent, and the figure was much higher in the hands of less experienced surgeons who attempted this formidable procedure. In addition these operations carried in their wake a whole array of such distressing sequelae as injuries to the bladder and ureter, often with resultant fistulas and not infrequently with injuries of the intestine.

It is difficult to believe that any gynecologist of that day could have been proud of the accomplishments in the field of surgery, and yet operative intervention was fully justified, because it was thus possible to salvage about a quarter of the patients who otherwise would be consigned to death by the palliative route. There was no other choice, indeed, until the introduction of radium. The earliest application of this substance was as a palliative for cancers which had been rejected as inoperable by the surgeon. It soon established itself as a definitely valuable palliative, superior to the cauterization or the acetone methods of palliation previously employed. There was often a striking retarding effect on the disease, and occasionally even a cure. It is also true that in the early days of radium therapy distressing injury was often inflicted by the radium itself. While the developments in technic which have occurred since then have greatly decreased these side effects of radiotherapy, they have not by any means eliminated them entirely, as attested by numerous reports in even the most recent literature.

It is small wonder that the early radium enthusiasts soon began to extend its use to the less advanced and less hopeless group of cases; those which might surgically be considered of borderline type. The palliative results were correspondingly better, with a more generous sprinkling of apparent cures in the borderline group, so that it was inevitable that before long even the early cases, those in which surgical intervention could be performed with a reasonably good chance for cure, were treated by radium alone.

With the passage of years it became apparent that radium could cure approximately the same proportion of patients as could even the most radical surgical procedure with almost no immediate mortality and with a lesser incidence of serious post-therapeutic complications. These facts were ample justification for the selection of radiotherapy as the method of choice in the treatment of cancer of the cervix, and this plan was for many years the prevailing one in almost all clinics. One did not need to be a radium enthusiast to concede the wisdom of such a plan under the existing circumstance. On the other hand, even if one conceded the preponderant advantages of radium therapy one could not criticize an occasional departure from the general plan. In a good many clinics, including this one, an occasional patient with an early form of cancer was subjected to radical operative intervention with no radiotherapy at all, this presupposing that the patient was in good condition for the operation and that the surgeon was thoroughly trained in the technic of the radical procedure. Throughout this whole period of ascendancy of radiologic therapy a few surgeons, notably Victor Bonney and Emil Ries, steadfastly clung to radical operative procedures as the method of choice.

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[21] Wood, F. C.: Diagnostic Incision of Tumors, J. A. M. A. 73: 764 (Sept. 6) 1919.

[22] Maun, M. E., and Dunning, W. F.: Surg., Gynec. & Obst. 82: 567, 1946.

with ultimate results comparing favorably with those obtained by radium therapy but still handicapped by a not inconsiderable primary mortality and morbidity.

In other words, the primary surgical era in the treatment of cancer of the cervix had given way to the radiologic phase. Gynecologists now appear to be passing into a third era, one of combined surgical and radiologic attack on the more favorable groups of cancers. Those of more advanced type, corresponding to stages 3 and 4 of the League of Nations' Classification, and most of those of stage 2, still constitute the exclusive domain of radiotherapy.

The rationale of this new trend is apparent when one considers that even after the most thorough application of radium and roentgen therapy, microscopic examination of follow-up biopsies shows residual carcinoma in a not inconsiderable proportion, often in clearly viable form. From such residues later recurrences may be expected, with increasing hazard of wider and wider dissemination through the lymphatics. Moreover, in a certain proportion of these patients the cancer appears to be resistant to radium therapy, this not being always explainable by the histologic cell type.

Many gynecologists and radiologists now consider that radical operative procedures should in selected cases follow radiotherapy, although there is still considerable variation in the details of the plan. Some employ only radium, others use roentgen therapy also, some preferring the roentgen application before radium, some after. It would lead too far afield to discuss the details of technic and dosage of these agents in the various clinics of the country and to compare the salvage rates reported by them, especially as it is still too early to reach any clear conclusion as to the most effective plan.

In the small minority of patients in whom hysterectomy is chosen, there is little difference of opinion as to the advantage of preliminary radiation. The two chief advantages are (1) the sterilizing effects of such preliminary therapy, thus greatly lessening the hazard of peritonitis, which has always been a bugbear in these radical procedures, and (2) the devitalization and fibrous entrapment of cancer cells, lessening the hazard of dissemination.

However, it should again be emphasized that the proportion of cases in which radical surgical intervention is considered justifiable is indeed small, and in many excellent clinics there are almost no exceptions to the radiotherapeutic plan for cervical carcinoma.

Just as there have been differences in opinion as to what constitutes the ideal plan of preliminary radiotherapy, so there have been differences in opinion and practice as to the scope of the radical procedure which should then be performed. With most gynecologists this differs from the ordinary panhysterectomy only in the removal of a large cuff of vaginal mucosa and as large a section as possible of the parametrium, through which the cancer cells drift outward to the pelvic glands. It does not, in most hands, include the formidable procedure of dissecting out the pelvic lymph glands, as was done in the original Wertheim type of operation. In my opinion there can be no question as to the value of removing a large section of the upper part of the vagina in view of the frequency of recurrence in this region. This recurrence usually represents only a persistence of cancer nests beneath a normal vaginal mucosa, as I have repeatedly seen in the laboratory study of such tissues.

There is still some conflict of opinion as to whether formidable glandular dissections are of sufficient advantage to the patient to justify the increased hazard of such procedures. Bonney, Meigs, Taussig and others have reported at least an encouraging number of cures after removal or radiation of involved glands. It is a well known fact that both the parametrial infiltration and the glandular enlargement seen with cancer is in a large proportion of cases of septic inflammatory type and not metastatic, so that meticulous histologic studies are necessary to validate conclusions as to the greater effectiveness of the more radical procedures.

Meigs [23] especially has recently adopted the extremely radical operation with extensive dissection of glands in a selected group of cases. Since most of the older master surgeons had gone through this phase, with final discouragement and resort to the safer radiotherapeutic plans, this reversion to surgical measures would seem indefensible except for the undeniable fact, as Meigs has emphasized, that the primary hazards of such extensive procedures have been greatly lessened by such surgical advances as transfusion, sulfonamide drugs and penicillin, none of which were formerly available to the surgeon. The results of the experiment which Meigs is carrying out, as he himself terms it, have already shown that this extensive operative procedure can be done with a primary mortality far less than was formerly noted, in fact without any deaths in the first 100 cases. However, the technical difficulties are the same for corresponding groups of cases, and the same types of complication still arise, as shown by the high incidence of ureteral injuries and fistulas in the first series of cases reported by Meigs, though the difficulties in this respect were apparently overcome in the second series.

As for the final results, it is as yet too early to evaluate them. The experiment is a laudable one, and the final result will be of general interest. I suspect, however, that most of those old enough to remember the earlier phase of extensive cancer surgery would for the present prefer to stand on the sidelines and watch this noble experiment rather than to take part in it themselves. Those who favor extremely radical operative procedures with complete dissection of the glands point to the extensive dissections of axillary glands performed by the general surgeon for cancer of the breast, but I do not think that any of these general surgeons is especially enthusiastic about the final results in cases of extensive axillary involvement. If the extirpation of the pelvic glands ensured the recovery of the patient it would be incumbent on all surgeons to follow this plan in otherwise operable cases, in spite of the magnitude of the operation and its definite hazard. But the glands do not constitute a sharp barrier to the disease, and it is highly probable that when they are extensively involved the cancer cells have penetrated beyond them into other lymphatic channels.

Finally, it should again be emphasized that what has been said as to the inclusion of various degrees of radical surgery as an important part of the treatment of cervical cancer applies, after all, to only a decidedly small proportion of all the cases. It pertains especially to the stage 1 cases, which make up not much more than 10 per cent, and to perhaps a few of the stage 2 group, together constituting not over 20 per cent of all cases seen. For the great majority of all cases, therefore, radiotherapy still remains about the only choice. It is not certain that even in the stage 1 cases the combined plan will give results better than radiotherapy alone. For example, in a recent study by Jones and Jones[24] a comparison was made of the results of panhysterectomy in 36 cases of early carcinoma, even including 5 of so-called preinvasive type, with those in 704 unselected cases of all stages treated by radiation. In the former group the five year cure rate was 41.6 per cent, in the latter 57 per cent. It is only fair to say that the operative procedure carried out in the surgical group was the so-called modified Wertheim operation, which did not include dissection of the glands but did include excision of as much parametrium and vaginal mucosa as possible. On the other hand, the cases were all of stage 1, and the results should therefore be properly compared with those of irradiation in the corresponding group. When one remembers that in this group figures as high as 80 per cent of cures have been reported, the superiority of radiation would seem apparent.

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[23] Meigs, J. V.: Am. J. Obst. & Gynec. 49: 542, 1945.

An important point of discussion now revolves about the role of involvement of the pelvic gland in influencing one's choice of a method of treatment. Unfortunately the occurrence or extent of this complicating factor cannot be accurately determined preoperatively. The fact that it is seen in a large proportion of Meigs' cases, all of stage 1 or stage 2, is an indication that it is always to be reckoned with even in clinically early cases. This observation is difficult to reconcile with the good results obtained in this group by radiation alone, since it appears to be conceded that radiotherapy has little effectiveness in eradicating glandular metastases. The good results in grade 1 cancer are equally hard to reconcile with Martzloff's[25] conclusion that not a single patient in his large series of cases in which parametrial and gland involvement had been found survived beyond five years, even though the operations were radical and were performed by expert gynecologists.

The problem presented by pelvic glandular involvement has been approached in various ways, viz. (1) radiation, with at least questionable effect, and (2) wide dissection of the pelvic glands without hysterectomy, depending on radiation to take care of the uterine lesion. While good results were reported by Taussig[26] with this method, it has not met with any wide acceptance, probably because of increasing recognition that residual cancer in the uterus is common and that hysterectomy should be a part of any radical operation for cervical cancer.[3] Attention has already been called to the fact that Bonney[27] and a few other surgeons have consistently favored extremely radical operative intervention, both before and since the advent of radium therapy. While the end results in Bonney's five year cures compared favorably with those of radiotherapy, the primary mortality of 14 per cent, later 9.3 per cent, discouraged most gynecologists from the operative plan, once such an alternative as radium became available.

THE COMBINED PLAN OF TREATMENT

One of the earliest champions of the combined plan of treatment was Lynch,[28] whose pioneer work in this respect has not been sufficiently appreciated. His five year cure rate with extremely radical operative intervention was 85.5 per cent in stage 1 and 53 per cent in stage 2, but in the latter the operative mortality was decidedly high, 23.5 per cent. Some of the cases in both groups received preoperative radiation, some did not.

The comparative statistical studies of end results made in numerous clinics throughout the world have achieved at least some measure of standardization through the adoption of the various clinical classifications which have been devised. None of them, perhaps, is altogether ideal. The one most widely employed, that of the League of Nations Health Committee, has the rather serious disadvantage of giving its stage 1 too large a scope, especially in these days of intensive search for extremely early and even preinvasive lesions. The latter make up such a tiny, almost infinitesimal proportion of all cases that they have little bearing on the general statistical problem, and yet there is still uncertainty and difference in opinion as to the best plan of treatment, some preferring wide local incision, some radiotherapy, some amputation of the cervix, some total hysterectomy and some expectant treatment with close follow-up. By any method the results should be almost perfect if the lesion is really noninvasive, and this ready curability would seem to justify its segregation into a separate if small group or subgroup.

Again, there is wide difference in results between stage 1 cases in which the lesion is not over 1 cm. in diameter and those in which the entire cervix is involved, though the two extremes are included in this group. In the former there is seldom any vaginal or parametrial infiltration; with the latter it is common, though it may not be expected. In this respect the Schmitz classification has a definite advantage, for it takes cognizance of these subdivisions in its stages 1 and 2. Cancers in the more advanced groups are practically all treated by radiation, but with the cases in stage 1, especially, various methods of management are now being used which often involve combinations of irradiation and surgical measures, so that efforts at sharper subdivision would seem advisable. They would even serve an educational purpose, emphasizing the increasing frequency of lesions in a far earlier stage than those conceived of when the classification plans were evolved. Though there is no novelty in the suggestion, a subdivision of stage 1 of the present League of Nations system would seem advisable. Three such subgroups suggest themselves. Stage 1 (*a*) might include the still infrequent but highly curable preinvasive cases; stage 1 (*b*) those in which the cervical lesion is not over 1 cm. in diameter; stage 1 (*c*) those in which the lesion is limited to the cervix but is larger than 1 cm. in diameter. Stage 2 would include those in which large areas of the cervix or the whole cervix is involved, with moderate vaginal and parametrial infiltration.

Stages 3 and 4, including cases largely unfavorable and definitely nonsurgical, could remain as at present described under the League of Nations' Classification. The criterion of pelvic lymph node involvement is a decidedly unreliable one to employ for clinical classification, important though it is in influencing the outcome. Such involvement can be determined clinically in only a fraction of the cases in which it is present. While it can be almost assumed in the advanced case, it may occur even in the clinically early one, as shown in the operative data of Bonney, Meigs and others. On the other hand vaginal and parametrial infiltration is readily demonstrable by vaginal and rectal examination. It therefore furnishes a more useful index for the clinical stage, though such infiltration does not by any means indicate malignant extension, being often of septic inflammatory nature.

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[24] Jones, H. W., Jr., and Jones, G. E. S.: J. A. M. A. **122**: 930 (July 31) 1943.

[25] Martzloff, K. H.: Bull. Johns Hopkins Hosp. **40**: 160, 1927; West. J. Surg. **52**: 255, 1945.

[26] Taussig, F. J.: Am. J. Obst. & Gynec. **45**: 733, 1943.

[27] Bonney, V.: Am. J. Obst. & Gynec. **30**: 815, 1935.

[28] Lynch, F. W.: Am. J. Obst. & Gynec. **22**: 550, 1931.

The treatment of corporeal carcinoma has always been somewhat simpler than that of cervical cancer, not merely because of the more favorable results obtained but because there has usually been a reasonable degree of uniformity of thought as regards the general principles if not the details of treatment plans. To revert again to the preradiation era, the surgical plan was then the universal one, and with much justification, because of the slower extension of the lesion, the far greater ease and safety of the operations indicated in such cases, and the reasonably high rate of cure. In the earlier cases five year survival rates as high as 70 per cent were reported by some, though the reports of others, like Norris and Vogt,[29] were much less favorable. Moreover, the operability rate was high, the only cases excluded being those far advanced and those in which any form of operative intervention appeared contraindicated because of such factors as advanced age, extreme obesity, general debility and serious systemic disease.

The advent of radium did not at first make any serious impression on this prevalent tendency to use surgical methods in the treatment of endometrial carcinoma, although later, chiefly because of the good results reported by Heyman,[30] there was a limited and short-lived resort to radiotherapy alone. With this form of uterine cancer even more than with the cervical variety a stage of combined surgical and radiotherapeutic management now seems to have established itself as superior to that of surgical intervention alone or radiotherapy alone.

Even after intrauterine radium therapy which is considered fully adequate by modern standards viable cancer is revealed in a large proportion, something like 50 per cent, of the subsequently removed uteri. The proportion would probably be higher if the microscopic examinations were more painstaking. The difficulties of precise intracavitary therapy are well recognized, and though various types of applicators have been devised to lessen this serious disadvantage the problem still remains. There are now, to my knowledge, no dissenters from the view that panhysterectomy is the most important part of the treatment of corporeal carcinoma. Somewhat less unanimous, but accepted by most of those of largest experience, is the conviction that the hazard of operative treatment is definitely lessened and the final results improved by radiotherapy as a preliminary to operation. The devitalization of the cancer cells, their imprisonment by the fibrotic reaction produced by radium or roentgen radiation, the sterilization of the cancer lesion and the consequent lessening of the operative hazard, all these are advantages which appeal to reason and which are apparently justifying themselves by the improvement in results following such a plan. There are of course certain disadvantages, such as the delay of six to eight weeks commonly prescribed as the ideal interval between radiotherapy and operative procedures.

Moreover, there is still wide variation as to the form of radiotherapy to be employed. Scheffey[31] and his group are warm advocates of radium therapy alone and have reported the astonishingly high five year cure of 90 per cent in a very small group of grade 1 cases. Miller and Henderson,[32] however, prefer roentgen therapy as the preliminary to operation, while in still other clinics both forms of treatment are employed. Without an exhaustive analysis of individual results, the evidence now available indicates that the best results are obtainable by the application of the general therapeutic principle of panhysterectomy and bilateral oophorectomy preceded by radiotherapy. Time will determine just what radiotherapeutic plan is the most effective and most practical. To say that there should never be any departure from this general plan would be absurd, just as it would be to assume that the general principle which has been enumerated is the final word on the subject, because it certainly is not.

POPULAR EDUCATION

The most important of all weapons against cancer, in the present state of medical knowledge, is the one which I shall treat most briefly because it is so self evident and because it has been urged so long, so widely and so forcefully that it seems almost banal to elaborate on it. All the statistics that have ever been compiled on the results of cancer treatment have shown again and again that the patients who obtain proper treatment have a fine chance for cure, those coming late comparatively little. If all cases were of group 1, cancer of the cervix would not be the dreadful disease that it is. The moral is plain enough, but it has not been easy to impress it on the public mind.

The patient is an essential part of medical treatment, and unless the patient makes some sort of contact with the physician the latter cannot give her the benefit of either his diagnostic or his therapeutic resources. Herein lies the great opportunity for popular education, and such organizations as the American Cancer Society have been rendering valiant service in this field. Periodic examinations and cancer detection clinics are a part of this educational crusade. The results achieved by such clinics are not to be measured by the comparatively small number of unsuspected cancers thus far revealed, but rather by the fact that they become foci for an ever widening interest among women in their own protection against one of their worst enemies. Every woman under the surveillance of such a clinic is likely to spread the lifesaving gospel among her friends. If every woman could have a competent gynecologic examination every six months, with proper treatment if necessary, the mortality due to cancer would drop like the proverbial shot.

Nor can the whole burden be placed on the woman, since the members of the medical profession are far from clear of responsibility for serious delays in the diagnosis of cancer. Ignorance is seldom the reason for delay, as there is not a physician in the world who does not know that early diagnosis means an increased chance for cure. More often it is a curious lack of personal responsibility for the patient's welfare, a mental apathy or lack of conscientiousness which leads the physician to drift along rather than to buckle down intensively to the solution of the problem. Volumes could be written on the education of both the laity and the medical profession, but this is scarcely the place to do more than underscore the outstanding importance of early diagnosis and treatment. Until much more decisive methods of cure are available, the educational campaign offers itself as the wide open avenue for lessening the mortality due to cancer.

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[29] Norris, C. C., and Vogt, M.: Am. J. Obst. & Gynec. **7:** 550, 1924.

[30] Heyman, J.: Acta radiol. **22:** 11, 1941.

[31] Scheffey, L. C.; Thudium, W. J.; Farell, D. M., and Hahn, G. A.: Am. J. Obst. & Gynec. **52:** 529, 1946.

[32] Miller, N. F., and Henderson, C. W.: Am. J. Obst. & Gynec. **52:** 894, 1946.

THE ANTIHISTAMINIC DRUGS

GEORGE L. WALDBOTT, M.D.
Detroit

Any medicament, no matter how valuable, may do great harm if it is employed indiscriminately. The fame of the new antihistaminic drugs has become so widespread, indeed, that they are often prescribed merely to satisfy the patient's curiosity. A critical inventory of their value is therefore indicated.

When an antigen to which a patient is sensitive enters his system, certain antibodies called "reagins" are formed, which are responsible for the allergic wheal. Simultaneously a protective antibody may originate, which is thermostabile (Loveless[1]) and presumably accounts for the improvement of the disease. The combined action of antigen and specific reagin in the bloodstream or in the tissues releases histamine and histamine-like substances which dilate capillary blood vessels and induce smooth muscle spasm, especially bronchospasm. Thus through the action of histamine the allergic wheal is formed—on the skin in urticaria; in the nose and sinuses in hay fever; in the mucous membranes of the bronchial tree in asthma, and in certain cerebral structures in migraine. Secondary infection may supervene, as in chronic sinusitis, bronchial asthma and allergic eczema.

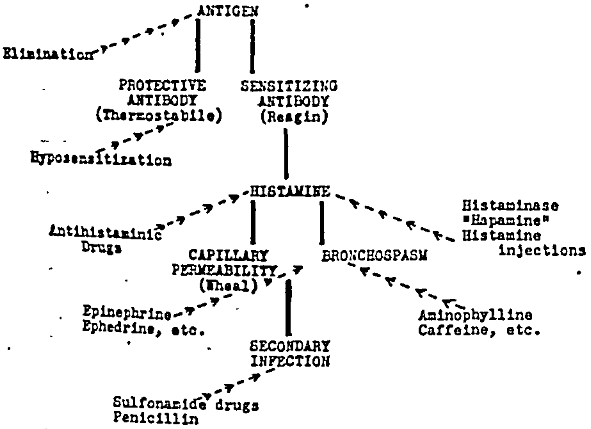

Fig. 1.—Interference of antihistaminic agents with phases in the development of allergic diseases.

The well known remedies for allergic diseases are designed to interfere with one or another of these phases in the development of the disease (fig. 1). For instance, one may attempt to eliminate the antigen from the patient's surroundings and from the diet. One may endeavor to produce the protective antibody by hyposensitization. Epinephrine and ephedrine contract the capillaries, thus they counteract the allergic wheal. They also relieve the spasm of smooth muscle. The remarkable effect of aminophylline in asthma is due mainly to relaxation of bronchial musculature.

Attempts have been made to counteract the effect of histamine (Feinberg[2]) in the chain of events leading to allergic manifestations. The enzyme histaminase (available commercially as "torantil"), which destroys histamine in vitro, has not proved to be of clinical value. Efforts toward building up an immune substance against histamine by injecting increasing doses of either histamine itself, or of histamine linked with protein (a product called "hapamine") have also met with little success.

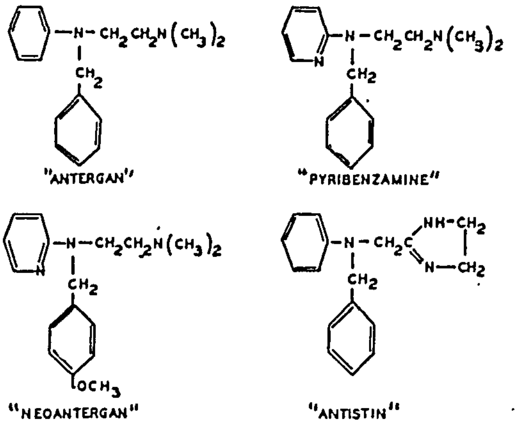

Fig. 2.—Ethylenediamine derivatives.

In 1933 Fourneau and Bovet[2] first demonstrated that certain phenolic ethers counteract the action of histamine in vitro and in vivo. Many such compounds have been, and are still being, synthesized both in Europe and in this country. Many had to be discarded because of their toxicity. The most promising ones[2a] are N-phenyl-N-benzyl-aminomethyl-imidazolin ("antistin") and N-p-methoxybenzyl-N-dimethylaminoethyl α aminopyridine ("neoantergan"), which were developed in Europe, and tripelennamine hydrochloride ("pyribenzamine hydrochloride") and diphenhydramine hydrochloride ("benadryl hydrochloride"), which originated in this country (figs. 2 and 3).[3]

These drugs specifically counteract most of the physiologic effect of histamine: in animals they diminish capillary permeability resulting from histamine, thus they counteract the histamine wheal. They raise blood pressure, which had been lowered by histamine. They prevent contraction, by histamine, of intestinal and uterine strips from guinea pigs, both when the drug is added to the fluid in which the strip is suspended and when it is administered to the intact animal before the experiment.

These drugs inhibit secretion induced by histamine in the lacrimal and salivary glands and the mucous glands of the bronchial tree. This is a clinically significant point, because excessive mucous secretion is a cardinal feature both in allergic rhinitis and in

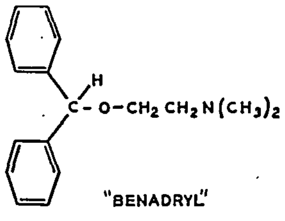

Fig. 3.—Ether derivative.

Read in the General Scientific Meetings at the Ninety-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., June 9, 1947.

[1] Loveless, M. H.: Immunologic Studies of Pollinosis: I. The Presence of Two Antibodies Related to the Same Pollen-Antigen in the Serum of Treated Hay-Fever Patients, J. Immunol. **38:** 25-50 (Jan.) 1940.

[2] For a complete bibliography on the subject, I wish to refer to the article of Feinberg, S. M.: Histamine and Antihistamine Drugs, J. A. M. A. **132:** 703-714 (Nov. 23) 1946.

[2a] "Antistin" and "pyribenzamine hydrochloride" are manufactured by Ciba Pharmaceutical Products, Inc.; "neoantergan" by Merck & Co., Inc., and "benadryl hydrochloride" by Parke, Davis & Company.

[3] Two widely publicized drugs, 1-dibutylaminomethyl-5,6,7-trihydroxy isobenzofuran-(3)-one ("anthallan") and ethylene disulfonate ("allergosil"), have no connection with these drugs and have been of no value in my experience.

asthmatic attacks. These drugs produce local anesthesia when injected as well as when applied topically. They prevent death from a lethal injection of histamine in experimental animals. Friedlander and Feinberg[4] observed that in this action "neoantergan" was most efficacious, followed by "pyribenzamine," "antergan" and "benadryl." In their effectiveness in protecting against anaphylactic shock, however, no individual variation could be observed. On the other hand, "benadryl" was found to be more effective than the other drugs in preventing intestinal spasm in guinea pigs (Sherrod, Loew and Schloemer[5]). From all this it appears that these drugs somehow counteract the pharmacologic properties of histamine. They do not chemically neutralize histamine nor do they prevent its production in the body; they are believed to compete with histamine in its affinity for the cells.

Clinical evaluation of any drug in allergic diseases is fraught with great difficulties: Allergic manifestations are frequently self limited, especially acute reactions such as those encountered from penicillin therapy. Even in such chronic conditions as perennial rhinitis and chronic asthma, spontaneous improvement may take place at any time because of sudden disappearance of certain inhaled or ingested antigens from the patient's environment and because of the likelihood of spontaneous desensitization to certain antigens, especially foods. Psychogenic influences play an important part; the administration of a capsule or injection of any drug may bring about relief, especially if the drug has been widely popularized by the members of the profession and by the lay press.

Clinically, the effect of the antihistaminic drugs reflects their powerful antagonism to histamine, which has been observed experimentally. Two actions stand out, ability to inhibit whealing and to dry up mucous secretion. Urticaria (table 1) therefore responds most dramatically: in both the allergic type and the serum sickness type of urticaria[6] complete subsidence of symptoms takes place in about 85 to 95 per cent of patients within twenty minutes after the ingestion of 50 to 100 mg. of the drug. The symptoms recur after four to six hours. The action of the drugs, therefore, is entirely palliative. In all other allergic diseases in which whealing and edema are prominent the benefit would probably be equally as striking, were it not for the fact that some degree of secondary infection usually becomes rapidly superimposed on the primary allergic changes. In hay fever, for instance, the antihistaminic drugs are most beneficial during the early part of the season when the sinuses and the nasal mucosa secrete clear, watery fluid and when there is no evidence of secondary infection. Waterlogged mucous membranes and nasal polyps shrink visibly within thirty minutes after ingestion of the drug. This is also true in perennial allergic nasal and sinus disease in the absence of suppurative changes. The drugs are highly effective in incipient asthma, both in the infantile type characterized by edema in the lungs as well as in the pertussis-like cough of allergic bronchitis, which so often inaugurates asthma. If the disease has progressed to the stage at which the characteristic thick, tenacious expectoration is present, there is considerably less, if any, benefit from the oral administration of the drugs. Given intravenously, however, severe attacks of asthma have been controlled temporarily by the antihistaminic drugs when aminophylline and epinephrine have failed. In allergic shock due to the accidental intravenous injections of antigens[7] or in shock from ingestion or inhalation of antigens to which the patients are extremely sensitive the action of the drugs is most impressive. They should be held readily available for intravenous administration in doses of 10 to 50 mg. for such emergencies.

TABLE 1.—*Estimated Efficacy of the Antihistaminic Drugs*

	Per Cent of Efficacy *
Urticaria	85 to 95
Hay fever	70 to 80
Vasomotor rhinitis	60 to 70
Asthma: Oral	40 to 50
Intravenous	65 to 75
Pruritus of eczema and contact dermatitis	30 to 40
Migraine	25 to 35
Gastrointestinal allergy	Doubtful

* Based on own data, those of Dr. Carl Arbesman, Buffalo, and the review of Dr. S. M. Feinberg.[2]

TABLE 2.—*Untoward Effects*

In Animals	In Men			
		Toxicity		
Toxic Dose: About 20 Mg. per Kg.	Side Effect *	Acute (2,000 Mg. in 48 Hrs.)	Chronic	Allergic Symptoms
Excitation Convulsions Lethargy Nasal and intestinal hemorrhages	Dizziness and sleepiness in 20 to 50% Dryness in mouth Headaches Nausea, vomiting Muscular twitching Paresthesia *Dilated pupils*	Only 1 case reported: Confused Lethargic Disoriented Shock	Granulocytopenia (?)	Asthma Cough Dermatitis † Urticaria †

* More pronounced with "benadryl" and "antistin," less with "pyribenzamine" and "neoantergan."
† Extremely infrequent.

The pruritus of atopic eczema and of contact dermatitis of the poison ivy type is effectively controlled, especially if it is associated with localized edema as encountered during acute exacerbations. There is little benefit in these conditions when secondary infection complicates the situation. The anesthetic properties of the drugs may be utilized by topical applications through compresses and ointments. In allergic headaches it is difficult to evaluate their efficacy. Experimentally, prophylactic injections of "benadryl" prevent headaches induced by histamine (Goodman and Conrad[8]). Similarly, histamine cephalalgia appears to respond to the drugs, especially to their intravenous administration. However, in true allergic migraine and in headaches associated with allergic sinus disease their effect is doubtful. In a few instances of gastrointestinal allergy which I encountered, improvement ensued. In allergic conjunctivitis topical application of a 0.5 per cent solution of "antistin" (Bourquin[9]) promptly controls photophobia, itching and lacrimation. The other drugs may be employed in the same manner.

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4. Friedlander, S.; Feinberg, S. M., and Feinberg, A. R.: Histamine Antagonists: VI. Comparative Antihistaminic Activity of Some Ethylendiamine Drugs in the Guinea Pig, J. Lab. & Clin. Med. **32**: 47-50 (Jan.) 1947.

5. Sherrod, T. W.; Loew, E. R., and Schloemer, H. P.: Pharmacological Properties of Antihistamine Drugs, Benadryl, Pyribenzamine and Neo-Antergan, J. Pharmacol. & Exper. Therap. **89**: 247-255 (March) 1947.

6. Waldbott, G. L., and Ascher, M. W.: Urticaria of the Serum Sickness Type, J. Allergy **6**: 584-592 (Sept.) 1938.

7. It is not advisable to administer the drugs prophylactically for the prevention of reactions from pollen or other antigenic injections, as they will interfere with the production of a local edema, the main criterion as to proper dosage.

8. Goodman, E. G., and Conrad, R. W.: The Prophylactic Effect of Benadryl on Experimental Histamine Headache, to be published.

9. Bourquin, J. B.: A New Synthetic Antihistamine Substance (Antistine) and Its Use in Ophthalmology), Schweiz. med. Wchnschr. **76**: 276-300 (April 6) 1943.

Oral doses of 50 to 100 mg. are also desirable. Erythema multiforme[10] and allergic purpura have also been named as being greatly benefited by them.

Among nonallergic diseases the antihistaminic drugs are reported to control and prevent irradiation sickness, which is believed to be brought on by the release of histamine (Lofstrom and Nurnberger[11]). Unfortunately, attempts to relieve gastric ulcer through the inhibition of gastric secretion by the drugs have failed so far.

Twenty to fifty per cent of all patients taking antihistaminic drugs experience side effects such as drowsiness and dizziness associated with a peculiar feeling of floating and being suspended (table 2). Headaches, nausea, dryness in the throat and muscular twitching are other side effects. These manifestations are noted more frequently with "benadryl" and "antistin" than with "pyribenzamine" and "neoantergan." They may appear with the first doses and be absent later, or vice versa. In some instances the sedative effect of the drugs contributes to the patient's subjective improvement; in others these manifestations constitute extremely serious, although only temporary, disturbances.[12] Prolonged administration of the drugs for weeks and months has thus far not resulted in any demonstrable organic damage either in human beings or in animals. So far there is no indication of a cumulative action or of addiction to the drugs. However, several patients have been encountered in whom there developed allergic manifestations from the antihistaminic drugs; namely, dry allergic cough, urticaria or dermatitis. Aggravation of existing asthmatic wheezing is occasionally noted. With the increased use of these drugs physicians will have to reckon with the development of sensitivity to them.

From all this it is evident that the antihistamine drugs deserve a definite place in the management of allergic diseases equal, and in some instances superior, to that of such established agents as epinephrine, aminophylline and ephedrine. Like these, they are purely palliative, they have unpleasant side effects and they in no way affect the course of the disease. They can be conveniently combined with other measures. Because of their specific action against histamine, they may serve as a differential diagnostic medium both clinically and experimentally.

A warning should be sounded against extravagant claims by overenthusiastic clinicians and patients, who are sometimes inclined to exaggerate the benefits obtained and to use the drugs indiscriminately. It is unsound to administer any drug to allergic patients on a routine basis rather than when the particular need arises. Patients should be warned against driving a car or operating a moving machine while taking these drugs, because accidents due to their soporific by-effect have already been reported.[13] It should be emphasized that there is a possibility of development of sensitization to these drugs. Moreover, it has not yet been determined whether or not they interfere with treatment directed toward development of specific immune substances. Undoubtedly the greatest significance in their development is the new principle which has instigated their trial and which will lead to further understanding of the mechanism of allergic diseases and perhaps to further therapeutic success.

ADDENDUM

Halpern of Paris, France, recently reported on a new series of compounds,[14] the thiodiphenylamine derivatives, which were more effective and less toxic in animal experiments than any reported previously. Two compounds, 3015 RP (dimethyl-aminoethyl-thiodiphenylamine) and 3277 RP (dimethyl-amino-2-propyl-1-thiodiphenylamine) were found to be particularly potent.

10 Peterboro Street.

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[10] Pinkus, H.: Benadryl in the Treatment of Erythema Exudativum Multiforme, Ann. Allergy **4:** 288-290 (July-Aug.) 1946.

[11] Lofstrom, J. E., and Nurnberger, C. E.: Irradiation Sickness: Histamine Effect Treated with Benadryl, Am. J. Roentgenol. **56:** 211-219 (Aug.) 1946.

[12] Caffeine and sodium benzoate and amphetamine ("benzedrine") may be used as antidotes.

[13] Slater, B. J., and Francis, N.: Benadryl, a Contributing Cause of an Accident, J. A. M. A. **132:** 212-213 (Sept. 28) 1946.

[14] Halpern, B. N.: Experimental Research on a New Series of Chemical Substances with Powerful Antinistaminic Activity: The Thiodiphenylamine Derivatives, J. Allergy **18:** 263-273 (July) 1947.

DIABETES IN A NEW ENGLAND TOWN

A Study of 3,516 Persons in Oxford, Mass.

HUGH L. C. WILKERSON, M.D.
Surgeon, U. S. Public Health Service
and
LEO P. KRALL, M.D.
Senior Assistant Surgeon, U. S. Public Health Service
Boston

In a community study of diabetes mellitus, 3,516 of the 4,983 inhabitants of Oxford, Mass., were tested for the disease. Diabetes mellitus is increasing in the United States, but an accurate determination of the prevalence of the disease among the general population is needed.

Estimates of the prevalence of diabetes vary considerably. With figures based on the count of living diabetic persons obtained by the National Health Survey[1] in 1935-1936, with appropriate adjustment for underenumeration, the United States Public Health Service estimated that the number of diabetic persons in the continental United States in 1937 was 660,000, approximately 0.37 per cent of the population. It must be recognized that this estimate is based on prevalence data supplied by family informants, usually housewives, for all members of their households.

Later studies in this field have suggested higher prevalence estimates. Thus Marks[2] recently estimated that the number of living diabetic persons in the United States was 675,000, while Joslin[3] and others believe that there are 1 million living diabetic persons in the country.

De Porte[4] reported that a survey in a rural county of New York in 1927-1928 revealed 154 cases of dia-

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Because of lack of space, this article is abbreviated in THE JOURNAL by omission of the illustration and of tables 3 and 5. The complete article will appear in the author's reprints.

Appreciation is expressed for the cooperation in this work by the four practicing physicians of Oxford, Mass. (Drs. Robert Fletcher, Herbert Hale, Joseph Lundy and Walter Schur); the Massachusetts State Medical Society, and the Worcester District Medical Society.

Acknowledgment is made of the assistance in the survey of Malcolm Ford, Surgeon, U. S. Public Health Service; Nell McKeever, Health Educator; Barbara Dormin and Teresa Hayes, Public Health nurses; Barbara Glenn, statistician; the technicians and clerical workers of the Diabetes field staff, and Constance Sellman, Director of the laboratory of the New England Deaconess Hospital. Also, the study would not have been possible without the wholehearted aid of the Selectmen, school officials and citizens of Oxford, Mass.

[1] The Magnitude of the Chronic Disease Problem in the United States: National Health Survey, 1935-1936, Bulletin 6, Sickness and Medical Care Series, United States Public Health Service, 1938.

[2] Marks, H. H.: Statistics of Diabetes, New England J. Med. **235:** 289-294 (Aug. 29) 1947.

[3] Joslin, E. P.; Root, H.; White, P.; Marble, A., and Bailey, C.: Treatment of Diabetes Mellitus, ed. 8, Philadelphia, Lea & Febiger, 1946, p. 40.

[4] DePorte, J. V.: Sickness in Essex County: Survey of During Fifty-Two Weeks, October 2, 1927- September 29, 1928, N. State J. Med. **29:** 1310-1316 (Nov. 1) 1929.

betes in a surveyed group of approximately 18,000 persons (a rate of 0.9 per cent). In a house to house canvass of 34,663 persons in Philadelphia,[5] 357 persons, about 1 per cent of the group, were diabetic.

Recent investigations based on physical examinations, which included laboratory analysis of specimens of blood and urine, have suggested that the prevalence of diabetes may be much higher than that indicated by surveys which included only known or recognized cases. In an industrial survey (Gates [6]) 109 persons believed most likely to have diabetes among a total of 1,800 employees were selected for dextrose tolerance tests. There were found to be at least 20 diabetic persons among the 1,800 persons, in 12 of whom the disease had not been previously diagnosed.

The prevalence of diabetes in two different groups of Massachusetts selective service registrants has been reported by Blotner and Hyde.[7] In the two groups a total of 114,738 men were examined, and 997 were found to have diabetes. Of these, approximately three-fourths had no knowledge of their condition. The occurrence of diabetes among a group of nearly 150,000 National Youth Administration [8] employees between 16 and 24 years of age who were examined by urinalysis was 1.2 per 1,000, a rate twice as high as that found for persons in the corresponding age group in the National Health Survey.

It is probable that the aging of the population as well as the lengthening of the diabetic person's life span will increase the total number of those with diabetes in the future. Spiegelman and Marks [9] have pointed out that by 1985, according to present indications, the total population of the nation will be at a maximum and one may expect an increase of 74 per cent in the diabetic population, while the general population will have increased by only 22 per cent.

While the population ages, the future trend in morbidity and mortality due to diabetes may not be unalterable. Scott [10] has emphasized that when knowledge of the methods of treatment employed in the best hospitals becomes universal, "diabetics will no longer die of diabetes. They will live long enough to die of one of the so-called 'natural causes' of death." Joslin [11] has stated that "one almost might say that a death from diabetes is no longer allowable."

Both experimental and clinical experience demonstrate the value of early diagnosis to make possible early treatment of diabetes. The assurance of benefits from a case-finding study rests on a reliable body of scientific knowledge. A theory generally accepted today is that the insulin insufficiency of diabetes results from a decreased functional capacity of the islands of Langerhans in the pancreas.[12] There is evidence from work with experimental animals that the islet cells of the pancreas have a capacity for regeneration and that early pathologic changes in diabetes are reversible. Reference is made to the work of Copp and Barclay;[13] Lukens and Dohan,[14] and Haist and Best [15] for experiments which bear out this hypothesis.

It is understood that human diabetes may not be entirely comparable to the diabetes found in experimental animals, but it is important that prevention should be attempted in susceptible human subjects.

It would seem clear that the period of reversibility which has been demonstrated is of utmost importance in the prevention of the disease. According to Joslin and associates,[16] the prevention of diabetes in man will "depend upon a knowledge of the duration and occurrence of this period of reversibility and on our ability to diagnose the disease during this period." John [17] has observed that early diagnosis of diabetes in the Army has meant in general a better outlook and a milder routine for the diabetic person.

Warren and Root [18] have interpreted the pathologic condition of the pancreas in diabetes as a constantly changing condition—island cells being gradually destroyed by long-continued action of an injurious agent (or possibly excessive functional activity); new cells being formed subsequently and destroyed by the toxic agent. This process goes on for some time, bu eventually the destructive process wears down th regenerative powers of the pancreas; thus the unfavor able course of the disease is explained. Warren has expressed the belief that this dynamic concep "explains the improvement of tolerance, fortunatel now occasionally encountered, as the regenerativ power of the pancreas outstrips the destruction of th pancreatic tissue by the injurious agent. This lead to the hope that in young persons with more resilien tissues proper treatment may remove the cause injury and favor the more or less complete restoratio of the damaged islands."

This knowledge of the reversibility of patholog changes in the pancreas represents an important contr bution to the physician's limited understanding of th causes and prevention of diabetes. Early discovery cases of diabetes may be considered a form of pr ventive medicine, because early diagnosis reduces th liability to serious progression and to the onset dangerous complications. To quote from Haist an Best,[20] "We are anxious to stimulate interest in th possibility of preventing diabetes, since from the poin of view of public health this is the most importan aspect of the diabetic problem."

For better public health control of the disease ther must be a greater realization by the public and th members of the medical profession of the prevalence diabetes and the importance of early diagnosis.

In its first community study of diabetes, the Unite States Public Health Service has sought to demon strate the practicability of a case-finding study to

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[5] Beardwood, J. T.: Report on Diabetes Survey in Philadelphia, Am. J. Digest. Dis. **11**: 345-349 (Nov.) 1944.

[6] Gates, E. W.: Diagnosis of Undetected Diabetes: Report of a Study of a Group of 1,800 Individuals, Indus. Med. **11**: 387-391 (Aug.) 1942.

[7] (*a*) Blotner, H.; Hyde, R. W., and Kingsley, L. V.: Studies in Diabetes Mellitus and Transient Glycosuria in Selectees and Volunteers, New England J. Med. **229**: 885-893 (Dec.) 1943. (*b*) Blotner, H.: Studies in Glycosuria and Diabetes Mellitus in Selectees, J. A. M. A. **131**: 1109-1114 (Aug. 3) 1946.

[8] The Health Status of N. Y. A. Youth, Federal Security Agency Bureau, Washington, D. C., Government Printing Office, 1942.

[9] Spiegelman, M., and Marks, H. H.: Age and Sex Variation in the Prevalence and Onset of Diabetes Mellitus, Am. J. Pub. Health **36**: 26-33 (Jan.) 1946.

[10] Scott, J. R.: Diabetes, New York, Funk & Wagnalls Company, 1937, p. 97.

[11] Joslin, E. P.: Introduction to Symposium on Diabetes, M. Clin. North America **31**: 259-265 (March) 1947.

[12] Lukens, F. D. W.: The Pathogenesis of Diabetes Mellitus, Yale J. Biol. & Med. **16**: 301-323 (March) 1944.

[13] Copp, E. F., and Barcley, A. J.: The Restoration of Hydropicall Degenerated Cells of the Pancreatic Islands in Dogs Under Insulin Trea ment, J. Metabolic Research **4**: 445-451 (Sept.-Oct.) 1923.

[14] Lukens, F. D. W., and Dohan, F. C.: Morphological and Functiona Recovery of the Pancreatic Islands in Diabetic Cats Treated with Insulin Science **92**: 222-223 (Sept. 6) 1940.

[15] Haist, R. E., and Best, C. H.: The Prevention of Diabetes, Proc Am. Diabetes A. (1941) **1**: 29-48, 1942.

[16] Joslin, E. P.; Root, H.; White, P., and Marble, A.: Treatment Diabetes Mellitus, ed. 7, Philadelphia, Lea & Febiger, 1940, p. 160.

[17] John, H. J.: Observations on Diabetes Mellitus in the U. S. Army Proc. Am. Diabetes A. **3**: 69-77, 1943.

[18] Warren, S., and Root, H. F.: The Pathology of Diabetes, with Special Reference to Pancreatic Regeneration, Am. J. Path. **1**: 415-42 (July) 1925.

[19] Warren, S.: The Pathology of Diabetes Mellitus, Philadelphia, Le & Febiger, 1938, p. 219.

[20] Haist and Best,[15] p. 31.

(*a*) determine the prevalence of diabetes in a typical American community; (*b*) evaluate the technics and methods of large scale diabetes diagnosis; (*c*) instill in the members of a community a realization of the need for periodic examinations for diabetes, and (*d*) discover early cases of diabetes so that, through prompt treatment by the family physician, further progression and complications may be avoided.

With these objectives in view, members of the United States Public Health Service tested 70.6 per cent of the 4,983 inhabitants in Oxford, Mass.

METHOD OF STUDY

Material and Method.—The site selected for the study was Oxford, Mass., located about 50 miles west of Boston. It is a typical New England town with 4,983 inhabitants. In age composition the population of the town closely parallels that of the country as a whole[21] as well as that covered by the National Health Survey (table 1). The people are mostly native born. Persons of French-Canadian descent compose about one third of the adult population, while many others are of old Yankee lineage, English or Scotch derivation. Some of the citizens are farmers, while many work in the local mills and still others commute to places of employment in Worcester, Webster and nearby communities.

Oxford is the birthplace of Clara Barton, founder of the American Red Cross, and is also the location of a summer camp for diabetic children. Oxford is the town referred to by Joslin[22] in a statement which presented one of the earliest conceptions of diabetes as a public health problem:

> . . . In a country town in New England . . . on its peaceful, elm-lined Main Street, there once stood three houses, side by side, as commodious and attractive as any in the village. In these three houses lived in succession 4 women and 3 men—heads of families—and of this number, all but one has subsequently succumbed to diabetes. . . .
>
> Although 6 of the 7 persons dwelling in these adjoining houses died from a single complaint, no one spoke of an epidemic. Contrast the activities of the local and state boards of health if these deaths had occurred from scarlet fever, typhoid fever or tuberculosis. Consider the measures which would have been adopted to discover the source of the outbreak and to prevent a recurrence. Because the disease was diabetes, and because the deaths occurred over a considerable interval of time, the fatalities passed unnoticed.

TABLE 1.—*Comparison of the Age Distribution of Oxford, Mass., with the Population of the United States and with the Population Canvassed in the National Health Survey*

	Per Cent in Each Age Group			
Age	Oxford Total	Oxford Group Tested	United States 1945[21]	National Health Survey[9]
Under 15	24.8	26.5	25.2	24.1
15 to 24	16.1	14.8	17.0	17.8
25 to 34	16.5	17.2	16.1	17.0
35 to 44	13.7	13.9	14.0	15.8
45 to 54	11.0	11.7	11.8	12.1
55 to 64	8.3	8.4	8.7	7.3
65 to 74	6.4	5.5	5.0	4.1
75 and over	3.2	2.0	2.2	1.6
Unknown ages	...	...	...	0.2
Median age	30.5	30.0	29.7	29.7

During the last ten years, according to local death records, 16 persons in this town have died of diabetes, 9 of them in their fifties or sixties. This number of deaths is consistent with the average diabetes death rate in Massachusetts.

TABLE 2.—*Population of Oxford, Mass., by Age and Sex in 1945; Number and per Cent of Population Tested for Diabetes in Oxford Survey by Age and Sex, 1946-1947*

	Oxford Population *			Oxford Residents Tested			% of Oxford Population Tested		
Age Interval	Total	M.	F.	Total	M.	F.	Total	M.	F.
All persons	4,983	2,515	2,468	3,516	1,680	1,836	70.6	66.8	74.4
Under 6	373	199	174	165	85	80	44.2	42.7	46.0
6 to 14	860	415	445	766	369	397	89.1	74.5	89.2
15 to 24	800	428	372	521	246	275	65.1	57.5	73.9
25 to 34	823	406	417	606	289	317	73.6	71.2	76.0
35 to 44	681	342	342	489	228	261	71.5	66.7	76.3
45 to 54	550	275	275	411	196	215	74.7	71.3	78.2
55 to 64	412	216	196	295	146	149	71.6	67.6	76.0
65 to 74	320	158	162	192	86	106	60.0	54.4	65.4
75 and over	160	75	85	69	33	36	43.1	44.0	42.4
Unknown ages	1	1	..	2	2	..	....	....	....

* Age and sex distribution was tabulated from the 1945 Massachusetts State Census of Oxford.

The study in Oxford was initiated with the aid of the state and district medical societies, the state and local boards of health and the four local physicians. An attempt was made to determine the number of known cases and to discover the previously unrecognized cases. The excellent cooperation of the townspeople is evidenced by the fact that 70.6 per cent of them received the test, with coverage better than 65 per cent in every age group except the very young and those over 65 years (table 2).

The Public Health Service personnel assigned to the project included a physician trained in diabetes, a health educator, two public health nurses, a statistician, four technicians and a clerk-stenographer.

Two interview centers were established, one at the town hall and the other at the fire station. Appointments were timed so that specimens of urine and venous blood were obtained about an hour after the midday or evening meal. Capillary blood specimens were drawn from the fingertip or ear lobes of children, whereas most of the adults had venipunctures. The school children and service organizations were tested in groups.

Specimens of urine were tested immediately at a temporary laboratory in the town hall, while protein-free filtrates from the specimens of whole blood were made and promptly forwarded to the Boston laboratory of the Diabetes Demonstration Unit for final analysis.

The urine sugar was determined on each specimen by a standard Benedict's qualitative test, followed up when positive by a quantitative Benedict's test.

The blood sugar was determined in a 2 cc. specimen of venous blood according to the method of Folin and Wu.[23] In the case of a capillary specimen, a Folin-Malmros[24] micro sugar test was performed on a 0.1 cc. specimen. To verify the fidelity of the blood tests, frequent spot checks were performed in the laboratory of a large Boston hospital.

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[21] Estimated Population of the United States by Age, Color, and Sex: 1940 to 1946, Population Special Reports, Series P-47, no. 3, United States Department of Commerce, Bureau of the Census, April 1947.

[22] Joslin, E. P.: The Prevention of Diabetes Mellitus, J. A. M. A. **76**: 79 (Jan. 8) 1921.

[23] Folin, O., and Wu, H.: A System of Blood Analysis: Simplified and Improved Method for Determination of Sugar, J. Biol. Chem. **41**: 367-374 (March) 1920.

[24] Folin, O., and Malmros, J.: Improved Form of Folin's Micromethod for Blood Sugar Determinations, J. Biol. Chem. **83**: 115-120 (July) 1929.

Diagnosis.—While the diagnostic criteria for diabetes mellitus adopted by different workers vary, it seemed practicable to adopt a single set of standards. On recommendation of an advisory committee of physicians from several clinics in Boston, a consistent one to one and one-half hour postprandial venous blood sugar of 170 mg. per hundred cubic centimeters or above or a capillary blood sugar of 200 mg. or more per hundred cubic centimeters plus glycosuria was considered to be presumptive laboratory evidence of diabetes.

For the group tested in Oxford, the routine was as follows:

1. The screening level for hyperglycemia was selected as 160 mg. per hundred cubic centimeters for venous blood and 190 mg. for capillary blood.
2. A person with no glycosuria and a blood sugar below screening level was notified by letter that the result of his test revealed no laboratory evidence of diabetes at the time.
3. On the initial laboratory test, if a person had any degree of glycosuria and/or if he had a blood sugar above screening level he was given a further test of urine and blood. If the results of the second test were above the diagnostic level, a diagnosis of diabetes was made. A negative second test following an initial borderline test was considered to be nondiabetic, and the person was notified accordingly.
4. A dextrose tolerance test was performed if the initial and recheck tests were not in accord, if both tests were borderline or if there was persistent hyperglycemia without glycosuria or vice versa.
5. If a person gave a history of previously known diabetes, blood and urine tests were performed to determine the patient's condition and the laboratory report was forwarded to the family physician. The family physician was consulted in order to confirm the diagnosis in every case of allegedly previously known diabetes.

In those cases in which dextrose tolerance tests were performed an overnight fasting reading was obtained for blood and urine, then the subject was given 100 Gm. of dextrose orally and specimens were obtained one, two and, when possible, three hours later. In a few instances, usually because of advanced age, the person was given 50 Gm. of dextrose with his regular meal, and then specimens of blood and urine were secured.

If a subject showed glycosuria in one or more of the specimens and a venous blood sugar level of 170 mg. per hundred cubic centimeters or above after the ingestion of dextrose, this condition was considered indicative of diabetes. While primary consideration was given to the height rather than to the duration of the curve, there was cognizance given to the opinions of eminent workers[25] that the duration of the curve is of great importance in the diagnosis of diabetes. The future progress of the patients will be followed in the few cases which might not be considered diabetic in some clinics.

If the person consistently demonstrated glycosuria and yet the blood sugar levels were within the normal range, a diagnosis of unclassified glycosuria was made. In cases of recurrent hyperglycemia without accompanying glycosuria a diagnosis of hyperglycemia without glycosuria was made.

During the course of the survey there were a few persons who refused blood tests but submitted specimens of urine, and without exception those with a trace or more of glycosuria agreed to further studies.

After the tests were completed each person was classified in one of the following ways:

1. Normal; no evidence of diabetes.
2. Known diabetes; previously diagnosed.
3. Newly discovered diabetes mellitus.
4. Unclassified glycosuria.
5. Hyperglycemia without glycosuria.

Whenever positive observations were confirmed and a tentative diagnosis was made, the patient was notified of an "abnormal condition" and advised to see his own family physician for any additional study or treatment indicated. The complete results of the survey were forwarded to the physician with an offer to perform any further tests he might wish in connection with diagnosis of the case.

RESULTS OF STUDY

Incidence of Diabetes.—Forty persons with prev ously diagnosed diabetes were found. One hundre and ninety-one other subjects with glycosuria, hype glycemia or both were retested. As a result, 30 pr viously undiagnosed cases of diabetes were found, pl 25 cases of unclassified glycosuria or hyperglycemi The other persons whose further tests showed no lal oratory evidence of diabetes were notified accordingl Those with diabetes and related positive observatior were referred to their family physicians, who wei also given a history and a detailed report of laborator studies.

A total of 39 dextrose tolerance tests were pe formed to check preliminary results. Seventeen of tl 30 new cases of diabetes were diagnosed with the ai of these tolerance tests. In 4 of the 17 cases a dia nosis was made with a modified type of test previous described. The patterns obtained in 13 standard de trose tolerance tests in cases diagnosed as diabetes a shown in the accompanying chart.

As might be expected, the majority of the cases wi both hyperglycemia and glycosuria on the first test we finally diagnosed as diabetes. See table 3 for results the screening process. Sixteen of the 25 persons this category were subsequently proved to have di betes, and their glycosuria and hyperglycemia on initi tests were on the average significantly higher than t levels observed for the 9 subjects ruled out of th group. However, on the first test, for those late termed diabetic, the degree of glycosuria ranged as lo as 0.3 per cent and the venous blood sugar as low a 162 mg. per hundred cubic centimeters.

The observation most commonly positive was glyco suria in the absence of hyperglycemia. This conditio was found in 123 initial tests, but in only 6 of thes cases was a diagnosis of diabetes thought justifiabl In these 6 cases the degree of glycosuria ranged fro 0.2 to 2.4 per cent. The average was 0.7 per cent compared to 0.4 per cent in those later proved non diabetic. Also, the capillary blood sugar level for thes 6 persons was relatively high, with an average o 165 mg. per hundred cubic centimeters as compare with 123 mg. for those with transient glycosuria.

In the interpretation of the significance of glycosuria the value of blood tests as a complement becomes apparent. There were 104 persons with glycosuria on the first test which did not recur on later tests; in 80 of these the level was 0.3 per cent or less. This condition was relatively common in school children and in several pregnant women, but no satisfactory explanation was found for its presence in the other adults. Lawrence[26] has expressed the belief that many of these irregular "alimentary" glycosurias are not negligible but rather a form of carbohydrate intolerance that may be a precursor of early diabetes.

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[25] (*a*) Mosenthal, H. O.: Interpretation of Glucose Tolerance Tests, M. Clin. North America **31**: 299-312 (March) 1947. (*b*) Lawrence, R. D.: Symptomless Glycosurias: Differentiation by Sugar Tolerance Tests, ibid. **31**: 289-297 (March) 1947.

Tentatively 17 subjects were considered as having unclassified glycosuria, because of persisting glycosuria in the absence of hyperglycemia. It is believed that 7 of these persons may become diabetic because of widely fluctuating blood sugar levels. In view of Dewees and Langer's[27] observations that in a large number of persons with apparent nondiabetic glycosuria there later developed diabetes, this total group would be a worth while source of future study.

Of the 43 subjects retested because of hyperglycemia alone on the first test, 8 were later classified as probably having diabetes. The average venous reading on the first test was 189 mg. per hundred cubic centimeters. In 8 of these 43 persons retested we did not consider a diagnosis of diabetes justified, and they were classified hyperglycemia without glycosuria. The remaining 27 persons had normal blood sugar levels on all subsequent tests.

A worrisome phenomenon was the fact that some of these persons exhibited an abnormal postprandial blood sugar level without manifesting glycosuria, even on subsequent dextrose tolerance tests. Is this a prediabetic state or a functionally slow utilization of carbohydrate? Mirsky[28] does not believe that the diagnosis of diabetes is dependent on the presence of sugar in the urine but believes that many such cases are metabolically diabetes mellitus.

Blood Sugar Level of Nondiabetic Persons Tested.—An interesting supplement to the diabetes case-finding program was the determination of the blood sugar level for a large series of persons with nondiabetic laboratory results. For 1,353 persons the venous blood sugar level was determined from a specimen taken sixty to ninety minutes after a meal. There were also available for study 1,026 capillary blood specimens fulfilling this time requirement for purposes of comparison.

In general there appears to be little difference between the blood sugar levels for males and females at any given age, however, there does tend to be a rise in the blood sugar level with advances in age.

The average blood sugar level increases with age, as does the proportion of persons with values above the average level. At age 15 to 24, the only group with a large enough number of both venous and capillary specimens to permit direct comparison, there is a difference of 20 mg. per hundred cubic centimeters between the average venous and capillary blood sugar level.

Ratio of Diabetes Cases to Portion of Population Studied.—The prevalence of diabetes by age and sex among the 4,983 persons in Oxford is detailed in table 4. The testing and survey program revealed that there were 40 diabetic persons in Oxford under treatment, and 30 more cases of the disease were discovered. If the total Oxford population is used as a denominator, conservative figures would show an incidence of 0.8 per cent known cases of diabetes and 0.6 per cent newly discovered, or a total incidence of 1.4 per cent.

However, since 29.4 per cent of the townspeople were not reached by the testing program, it is estimated that the number of previously undiscovered cases of diabetes which might have been found had all the townspeople been tested would perhaps be as large as 47. The 40 known cases plus 47 estimated cases are equivalent to 87 cases among 4,983 persons, or 1.7 per cent of the population in Oxford.

Illustrative Case Histories.—Although all authorities in the field of diabetes mellitus do not agree on the precise blood sugar level for the diagnosis of the disease, most will recognize that the 30 cases diagnosed as diabetes in the study are abnormal and conform closely to the laboratory and clinical picture of the disease. (See table 5 for pertinent data and laboratory observations for these cases.) It is our belief that 25 of the cases would be considered diabetes by most clinicians.

TABLE 4.—*Prevalence of Diabetes Among Persons Tested in Oxford, Mass.; Designated Readings by Age and Sex.*

Age Interval	Total No. Tested			Total Negative *			Diabetes: Observed in Group Tested									Estimated "New" Cases of Diabetes in Oxford †			Estimated "New" plus Known Cases of Diabetes					
							Total			Known			Discovered						Number			Per Cent of Total Oxford Population		
	Total	M.	F.	Total	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.
All ages........	3,516	1,680	1,836	3,421	1,633	1,788	70	31	39	40	15	25	30	16	14	47.1	26.6	20.5	87.1	41.6	45.5	1.7	1.7	1.8
Under 15.......	931	454	477	931	454	477	..	..	..	..	..	..	..	..	..	....	....	....	....	....	....	...	...	...
15 to 24.......	521	246	275	518	244	274	2	1	1	1	..	1	1	1	..	1.7	1.7	....	2.7	1.7	1.0	0.3	0.4	0.3
25 to 34.......	606	289	317	600	286	314	2	1	1	2	1	1	..	..	..	...	...	....	2.0	1.0	1.0	0.2	0.2	0.2
35 to 44.......	429	228	201	415	220	195	9	5	4	5	3	2	4	2	2	5.6	3.0	2.6	10.6	6.0	4.6	1.5	1.8	1.3
45 to 54.......	411	196	215	380	185	195	19	9	10	10	4	6	9	5	4	12.1	7.0	5.1	22.1	11.0	11.1	4.0	4.0	4.0
55 to 64.......	295	146	149	274	138	136	15	3	12	7	..	7	8	3	5	11.0	4.4	6.6	18.0	4.4	13.6	4.4	2.0	6.9
65 to 74.......	192	86	106	175	78	97	14	6	8	11	4	7	3	2	1	5.2	3.7	1.5	16.2	7.7	8.5	5.1	4.9	5.2
75 and over...	69	33	36	57	26	31	9	6	3	4	3	1	5	3	2	11.5	6.8	4.7	15.5	9.8	5.7	9.7	13.1	6.7
Unknown ages.	2	2	..	2	2	..	..	..	..	..	..	..	..	..	..	....	...	...	....	...	...	...	...	...
% in group tested ‡......	100.0			97.3			2.0			1.1			0.9											

* The negative group includes all those persons rechecked but found to have neither diabetes nor persistent glycosuria or hyperglycemia.

† This estimate is based on the assumption that the percentage of persons in each age group discovered to have diabetes during the survey would prevail had all persons been reached by the testing program. For example, we found 4 new cases in the age group from 35 to 44. Since we tested 71.5 per cent of that group, we might assume that the number of new cases in this age group should be expanded to a total of 100/71.5 times that number, or 5.6 cases. It is believed that the number of "known" cases should not be expanded, since an intensive effort was made to locate all known cases of diabetes. This factor naturally makes the percentage of diabetic persons in the population smaller than that per cent in the sample—1.7 as compared with 2.0 per cent.

‡ The rest of the group tested includes 8 persons with proved hyperglycemia and 17 with persistent glycosuria, who composed 0.7 per cent of the whole.

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26. Lawrence, R. D.: The Diabetic Life, ed. 11, London, J. & A. Churchill, Ltd., 1939, p. 21.

27. Dewees, E. J., and Langer, P. H., Jr.: Study of Glucose Tolerance Tests and Significance of Glycosuria, Tr. A. Life Insur. M. Dir. America (1942) 29: 105-134, 1943.

28. Mirsky, I. A.: Personal communication to the author.

Since a basic purpose of the demonstration is to show the value of early diagnosis, an illustrative case is reported:

Case 93.—A boy aged 16, a student, had no previous complaints. His grandmother died with diabetes mellitus. On his initial test he was found to have glycosuria of 0.4 per cent and a capillary micro blood sugar of 175 mg. per hundred cubic centimeters an hour after a full meal. The second test revealed glycosuria of 0.5 per cent and a capillary blood sugar level of 190 mg. an hour after eating. Two dextrose tolerance tests were done several weeks apart, with the following results: The fasting, one hour, two hour and three hour values for urine sugar were 0.4, 0.7 and 0.3 per cent, and a trace; values for venous blood sugar after the same intervals were 96, 185, 128 and 90 mg. per hundred cubic centimeters.

Admittedly this person's blood sugar level barely reaches the minimal diabetic standards. It is possible that his blood sugar curve may be the "alimentary" type described by Wilder.[29] However because of both the history of diabetes in the family and our laboratory observations we have considered him a potential diabetic, and he is at present under observation and dietary treatment by his family physician. The educational committee of the American Diabetes Association is particularly interested in following this patient, because this may be the type of case in which early discovery plus prompt treatment may prevent frank diabetes.

The following case illustrates the value of a complete urinalysis as an essential part of a physical examination.

Case 3297.—A man aged 55, a mill worker, complained of malaise, weakness and occasional transitory numbness and neuritic pains in the extremities at night. His efficiency at work was impaired. After a fainting spell at work, he was given a physical examination, but no test was made for sugar in the blood or urine. Later a diabetes test by one of the survey teams showed a urine sugar of 2 per cent and a capillary blood reading of 180 mg. per hundred cubic centimeters. A second test showed 2.4 per cent urine sugar and a venous blood sugar of 290 mg. The diagnosis of diabetes was confirmed by his family physician, and he is now under treatment.

Analysis of Data on Diabetic Persons.—From information provided on the history form, we have analyzed certain data about the 40 previously known and the 30 newly discovered diabetic persons, a summary of which follows:

Age: The ages of the newly discovered diabetic persons varied from 16 to 93, while the median age was 55 years. Those from 45 to 64 years of age constituted over half of the new cases.

Table 6.—*Per Cent Overweight or Underweight for Seventy Diabetic Persons in Oxford, Mass., at Time of Maximum Weight*

% Overweight or Underweight	Number of Persons: Newly Discovered M.	Newly Discovered F.	Known M.	Known F.
Overweight				
40 to 45.9	..	..	..	3
30 to 39.9	..	..	..	5
20 to 29.9	3	4	5	2
10 to 19.9	3	5	3	8
5 to 9.9	3	2	3	1
Less than 5% above or below average	3	1	2	1
5% or more underweight	2	1	1	1
Not stated	2	1	1	4
Total	16	14	15	25

Among the 40 known diabetic persons, the youngest was aged 19 and the oldest 78. The median age of the group is 59.5 years.

The duration of diabetes in the known cases ranged from a few months to thirty years. Five of the patients had diabetes of twenty or more years' duration. For the whole group the average duration was approximately 8.6 years.

Table 7.—*Comparison of Diabetic and Nondiabetic Population of Oxford, Mass., with Relation to Family History of Diabetes for Ages 15 and Over**

	All Ages: Diabetic, Total No.	Diabetic, Total %	Diabetic M.	Diabetic F.	Nondiabetic, Total No.	Nondiabetic, Total %	Nondiabetic M.	Nondiabetic F.
All persons	70	100.0	31	39	2,490	100.0	1,179	1,311
Number with family history of diabetes	27	38.6	12	15	453	18.2	205	24
Familial history	3	4.3	1	2	76	3.1	35	41
Hereditary history	14	20.0	5	9	320	12.8	146	174
Familial and hereditary history	6	8.6	3	3	15	0.6	9	6
Unspecified history	4	5.7	3	1	42	1.7	15	27
Number with no family history of diabetes	42	60.0	19	23	1,948	78.2	929	1,019
Unknown	1	1.4	..	1	89	3.6	45	44

* Excludes 25 persons with either hyperglycemia or glycosuria not diagnosed as diabetes.

Sex: There were 31 men and 39 women in the series of cases. The small difference in prevalence between the two sexes is shown by the fact that 1.7 per cent of the men in Oxford were diabetic as compared with 1.8 per cent of the women (table 6). This ratio is different from what might be expected on the basis of general mortality data showing higher diabetes death rates for women than for men.

National Origin or Descent: It has already been mentioned that the predominant racial groups in Oxford are those of French or French-Canadian descent. Among the diabetic persons there, 29 were of French descent, 15 were of English or Scotch descent and 26 represented all other groups.

Although the incidence of diabetes among the French group was much higher than for any other nationality, it is impossible to draw definite conclusions from this fact because of intermarriage of racial groups and the small numbers involved. These observations are of interest, however, in view of Blotner's [7a] report of a relatively high prevalence of the disease among the French. We believe that testing any discrete group for diabetes would augment the evidence for the universality of the disease.

Family History of Diabetes: The results of this study bear out the previous belief that a family history of diabetes is reported more frequently by diabetic than nondiabetic persons (table 7). For those over 15 years of age, a family history of diabetes was reported by 38.6 per cent of the diabetic persons and 18.2 per cent of the nondiabetic. Among the younger adult diabetics, from 15 to 44 years, a family history of the disease was extremely prevalent, since 8 of the 13 patients reported it. Among the younger adults who were not diabetic, this family history was reported by 20.2 per cent. Not only is a family history of diabetes more pronounced among diabetic than among nondiabetic subjects but it is of interest to observe that this family history was frequently reported by nondiabetic persons —in 18.2 per cent of 2,490 adults.

An illustration of this pronounced familial tendency in diabetes is shown by cases 1585, 1601 and 1803, in which the disease was found in a father aged 84, in his daughter aged 55 and in his son aged 53. On first interview all 3 denied a known history of diabetes in the family. The son had been about 15 per cent overweight at the time of his maximum weight and the daughter, about 10 per cent overweight. The father was underweight at the time of the survey, but his past weight history is uncertain because of his advanced age.

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[29] Wilder, R. M.: Clinical Diabetes Mellitus and Hyperinsulinism, Philadelphia. W. B. Saunders Company, 1940, p. 31.

Overweight: The occurrence of overweight at some period of their lives was reported by most of the diabetic persons in this series; at the time of their maximum weight 20 of the 31 men and 30 of the 39 women had been overweight. (In this study overweight was considered as 5 per cent above average for weight and height according to the standard Metropolitan Life Insurance Tables.) Table 6 illustrates the degree of overweight observed in these cases.

Symptoms: This study shows that many of the symptoms and observations commonly associated with diabetes are not recognized by the patient. Among the newly discovered cases such a classic symptom as polydipsia occurred in 10 patients, while 8 reported polyuria. The public needs better acquaintance with the symptoms of diabetes, which generally are considered to be well known. Only 5 of the new patients on careful questioning reported no symptoms at all, although in a few the symptoms manifested were vague nes, such as malaise or a feeling of tiredness.

Some significant symptoms reported by the 30 newly discovered diabetic persons follow, in the order of their requency: cramps or pains in extremities, reported 10 times; polydipsia, 10; weight loss (5 per cent or more), 10; polyuria, 7; pruritus, 7, and polyphagia, 2.

Severity of New Cases: On an empiric basis of glycosuria, degree of hyperglycemia and number and severity of symptoms, the 30 new cases of diabetes could be classified as follows: severe 9; moderate 7; mild 9, and early or "probable" 5.

Method and Degree of Control in Known Diabetic Persons: Generally the known diabetic patients in Oxford appeared glad of the opportunity to have a blood test and urinalysis. Another 18 diabetic persons from nearby areas requested the tests, but their results are not reported with this data.

An attempt was made to evaluate the condition and degree of control of the diabetic patients in Oxford. For purposes of comparison, we have designated good control as glycosuria under 1 per cent and a blood sugar level under 200 mg. per hundred cubic centimeters (venous) an hour after a full meal. By these standards 17 of the 40 patients were satisfactorily controlled, while the others had excess glycosuria or hyperglycemia and, in many instances, active symptoms. Two diabetic patients in Oxford were not tested during the study but were reported by their physicians.

At the time of the survey 24 of the diabetic persons were taking insulin, with daily dosages ranging from 4 to 82 units. The average daily dosage was 21 units. Six other patients had taken insulin previously but later omitted its use.

The diet of the patients tested was not determined in great detail. Seven apparently followed a rigid diet. The most commonly reported description of diet was "restricted." Nine reported either no dietary restrictions or negligible ones, such as "no sweets."

COMMENT

1. The results of this study indicate the unreliability of the fasting blood sugar level as a means of diagnosing early diabetes. Only 3 of the 14 dextrose tolerance tests completed in the diagnosis of the new cases had a fasting blood sugar value of 130 mg. per hundred cubic centimeters (venous) or higher; in these cases the readings were 280, 178 and 132 mg. All the others had fasting blood sugar levels below 130 mg., even though the subsequent blood sugar levels were as high as 280 mg. one or two hours after the ingestion of dextrose. (See table 5 for a summary of the symptoms and laboratory data on the 30 new cases of diabetes.) As a single diagnostic procedure tests of blood and urine taken an hour after a full meal constituted a more useful index than fasting blood and urine tests.

2. The results of the tests show the necessity of using both blood and urine tests as a screening device to diagnose diabetes. If urinalysis alone had been employed in this study 8 cases of diabetes would have escaped diagnosis. Moreover, if only blood specimens had been taken 6 cases would have escaped detection. In addition, it is highly undesirable to tell a person that he has no diabetes on the basis of just one of these tests and to have symptoms of the disease develop later.

3. One of the problems experienced was the necessity of retesting 123 subjects with only glycosuria on the first test in order to locate 6 cases of diabetes. In the future this difficulty may be avoided by making chemical tests which would eliminate reducing substances other than dextrose.

4. Benedict's qualitative test for urine sugar is considered to be practical and accurate for use in a large scale testing program.

5. For large scale screening purposes simpler methods of accurate, rapid blood sugar testing are needed. Intensive efforts are being made in this direction.

6. It is conceded that a definite diagnosis of diabetes, particularly in the milder cases, often cannot be made except on the basis of repeated tests of urine and blood over a period of several months. The new cases in this series will be observed further in an effort to exclude the possibility of transient hyperglycemias or glycosurias.

SUMMARY

1. Recent estimates have indicated a widespread prevalence of diabetes.

2. Clinical and experimental studies by others indicate the value of early diagnosis of diabetes.

3. A diabetes mellitus study based on history, urine and blood sugar tests and dextrose tolerance tests was made by the United States Public Health Service on 3,516 persons in Oxford, Mass., a typical American town. This number represents 70.6 per cent of the entire population of 4,983.

4. A total of 70 cases of diabetes were found. This included 40 cases previously known and 30 discovered during the study. This was a prevalence of 2.0 per cent of those tested.

5. Probably every known diabetic person was listed, but there were believed to be additional undiscovered cases among the remaining untested portion of the population. For the entire population of 4,983, the prevalence of diabetes in Oxford is 1.4 per cent (0.8 per cent old and 0.6 per cent new cases). Projecting the figure of the 1,400 untested cases on the basis of the observations in the tested cases, the prevalence of diabetes in Oxford would be 1.7 per cent.

6. For every 4 previously known cases there were 3 more hitherto undiscovered and unsuspected cases.

7. The large ratio of new to known cases which was observed in this study indicates a probable prevalence

of diabetes in the United States higher than that hitherto reported.

8. Among the 70 cases of diabetes observed there were 31 men and 39 women. The median age of the known diabetic persons was 59.5 years and that of the new patients was 55 years.

9. The prevalence of the disease among French Canadians was high, but this group is predominant in the tested area.

10. A family history of diabetes was found in 38.6 per cent of the cases of diabetes and in only 18.2 per cent of the nondiabetic cases.

11. Many of the patients with newly discovered cases reported symptoms commonly associated with diabetes but yet were not aware of the significance of those symptoms.

12. An evaluation of the condition of the persons known to have diabetes indicates a need for improvement in the control of the disease by the patient.

13. Diabetes is much more prevalent than is commonly supposed, with large numbers of unrecognized cases of the disease in each community. Application of ways and means of discovering diabetes early by means of simple, effective tests is necessary in order that prevention may be obtained in early potential cases and that those with easily recognizable diabetes may receive adequate care early, and thus escape many of the complications of this disease.

JUNCTION NEVUS—NEVOCARCINOMA

(The So-Called Melanoma Group)

WILBERT SACHS, M.D.
GEORGE MILLER MacKEE, M.D.
OSCAR D. SCHWARTZ, M.D.
and
HERBERT S. PIERSON, M.D.
New York

Of the numerous problems associated with the pigmented nevi, those concerned with the diagnosis and treatment of the junction nevus and nevocarcinoma (melanoma) are the most important. By the presentation of an orderly concept of junction nevus and nevocarcinoma, it is the purpose of this discussion to provide a working basis for their management.

Terminology.—We do not favor the term melanoma, as it is used loosely at times to denote any type of pigmented nevus; and it is ambiguous, as it refers both to a certain type of nevus and to the malignant growth which develops from it. We prefer the terms junction nevus and nevocarcinoma since they are more specific and more descriptive and eliminate the previous objections.

Junction nevus is a cellular nevus in which nests of nevus cells can be seen with ease in the basal cell zone. It is called junction because it arises at the junction of the epidermis and cutis. The reason for the name nevocarcinoma is self-explanatory. These terms have not originated with us and have been used in the past. Junction nevus is synonymous with melanoma, benign melanoma, epidermic-dermic nevus and schwannoma. Nevocarcinoma is the same as melanoma, malignant melanoma, melanocarcinoma, melanoblastoma and melanosarcoma; nevocarcinoma without pigment is identical with amelanotic melanoma.

JUNCTION NEVUS

Clinical Description.—Junction nevus usually is described as a pea-sized, flat or slightly raised, smooth, nonhairy lesion of a deep brown to black color. However, the lesion may vary in size from 1 mm. to several centimeters, extend considerably above the surface, be verrucous, have hair and be nonpigmented. Further, the criteria enumerated in the clinical description are observed, at times, in other dermatoses.

The following diseases should be considered in the clinical differential diagnosis: other pigmented nevi, such as intraepidermic epithelial, intradermic epithelial and blue nevi; basal cell epithelioma with pigment, hematoma, granuloma pyogenicum, angioma, thrombotic angioma, glomus tumor, seborrheic verruca, spiradenoma and single lesions of Kaposi's sarcoma and leukemia. Aside from the clinical features, the age of the patient, the history and location of the lesion, subjective symptoms and examination of the blood are helpful, but a biopsy is of prime importance in making a conclusive diagnosis.

Biopsy.—The microscopic picture of junction nevus is definite, and the diagnosis can be made easily. However, differences of opinion exist as to the advisability of removing such tissue. Some believe that this may initiate activity in the lesion, while others consider that biopsy is necessary and not contraindicated. We agree with the latter group for the following reasons:

First, we have studied tissue on which numerous clinical diagnoses other than junction nevus have been made. Even though the microscopic diagnosis proved to be junction nevus, we have never known cancer to develop as a result of this practice, nor has biopsy increased the degree of malignancy in existing nevocarcinoma.

Second, there is often no alternative to biopsy, for on such sites as the nail bed, fingers, toes, penis, vulva, nose, eyelids, lips and in the mouth suspected lesions cannot be removed by wide excision without causing serious disfigurement and damage. Since there are many relatively benign lesions which may simulate junction nevus and nevocarcinoma we consider that this type of operative procedure is not justified without a definite microscopic diagnosis.

Third, many authorities have stated their belief that there is practically no possibility of disseminating tumor emboli to distant parts by the careful removal of material for biopsy. Among these are Wood,[1] Ewing,[2] Hellwig,[3] Boyd,[4] Donnelly[5] and Satenstein.[6] MacKee and Cipollaro[7] have stated that "The advantage of and the necessity for a careful microscopic examination are now fairly well understood by the medical profession. Formerly, it was considered dangerous to perform a biopsy in the presence of a malignant neoplasm. It is now the consensus of opinion among students of cancer that a properly conducted biopsy is without danger."

Microscopic examination should be made in all cases of suspected junction nevus and nevocarcinoma, either to establish or corroborate the diagnosis. Small lesions should be removed entirely and then examined; from

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From the Skin and Cancer Unit, New York Post-Graduate Medical School and Hospital, Columbia University College of Physicians and Surgeons.

[1] Wood, F. C.: The Diagnosis of Cancer, J. A. M. A. **95:** 1141-1148 (Oct. 18) 1930.

[2] Ewing, J. L.: Neoplastic Diseases, ed. 4, Philadelphia, W. B. Saunders Company, 1940, p. 112.

[3] Hellwig, C. A.: Biopsy in Tumors, Arch. Path. **13:** 607-633 (April) 1932.

[4] Boyd, W.: A Textbook of Pathology, ed. 4, Philadelphia, Lea & Febiger, 1943, p. 313.

[5] Donnelly, A. J.: Biopsy, Clinics 4: 97-101 (June) 1945.

[6] Satenstein, D. L.: Unpublished notes.

[7] MacKee, G. M., and Cipollaro, A. C.: Cutaneous Cancer and Precancer, New York, American Journal of Cancer, 1937, pp. 196-197.

larger lesions a small piece about 0.5 cm. in diameter is sufficient for examination. Reports on such biopsies should be made within a few days, and the necessary treatment should be instituted promptly.

Microscopic Features.—While the clinical diagnosis of junction nevus offers some difficulty, the histologic picture is distinct, and only some of the other pigmented nevi and the transitional stage between the nevus and the cancer need be differentiated. The remaining dermatoses, although clinically suggestive of junction nevus, exhibit entirely different microscopic features.

Junction nevus is composed entirely of nevus cells. In the cutis these cells may be few or abundant, diffuse or compact, and may be arranged in small groups simulating glandular tissue. In the lower part of the epidermis are spaces containing several nevus cells, called cell nests, and about them the basal cell margin is missing. Hair follicles usually are not present but in some instances are seen; at times pigment may be absent. The clear cells (cellules claires) supposedly characteristic of this nevus, although sometimes helpful, are by no means pathognomonic, as they may be demonstrated in other diseases. There is no inflammatory reaction.

Nevus cells are about the same size as, and appear not unlike, individual prickle cells. The shape is influenced by the degree of crowding, but they are seldom round. There is no connection between one cell and the other, and the cellular outlines are clear. The cytoplasm is distinct, well stained and somewhat homogeneous. The nuclei are round or oval, vesicular and not deeply stained; frequently the cells are multinucleated. Varying amounts of both extracellular and intracellular pigment are seen.

The intraepidermic type of epithelial nevus shows no similarity, microscopically, to the junction nevus. The process is entirely epidermic, and no nevus cells or cell nests are present. The intradermic nevus, however, resembles the junction nevus, but the nevus cells are not connected with the epidermis and there are no cell nests.

Any combination of these nevi may be noted in the same lesion. In such a case the clinical features of the junction nevus are entirely masked and can only be determined microscopically.

The blue nevus (Jadassohn-Tieche) is also composed of nevus cells, but these are of connective tissue, not of epithelial origin. The cells are elongated, spindle-shaped and produce melanin. They may be located anywhere in the cutis but often are about the adnexa. The cells may be few or many, localized in one portion or diffused throughout the cutis; cell nests are never found.

NEVOCARCINOMA

Malignant change in a junction nevus results in a nevocarcinoma. This alteration may be insidious or rapid. Although signs of this change may be detected clinically, alteration in the character of the cells or the extension of the process may be so gradual as to give no visible evidence of its occurrence. Thus the transformation would be revealed only by the microscopic observations. MacKee and Cipollaro[7] have stated that: "A carefully performed biopsy and painstaking microscopic study are often necessary for an unequivocal diagnosis. In the case of malignant neoplasm such study furnishes valuable information relative to type and grade of malignancy, stage of evolution, invasiveness, metastasis, prognosis, . . . and serves as a guide in the selection of the best therapeutic method or methods."

We subdivide nevocarcinoma into early or late stages based on the degree of malignancy found, rather than on a time factor. Early nevocarcinoma may be present, even though the lesion has existed for considerable time, and late nevocarcinoma may be of short duration.

Alteration in size, color, surface, ulceration, inflammation, scaling, bleeding, crusting or tenderness may be observed in those lesions which show clinical variation from the original nevus. In late nevocarcinoma the lesion has many of the changes mentioned, and these are accentuated. There may also be lymph node involvement and metastasis. Even without evident metastasis or enlarged lymph nodes, the pathologic observations may be sufficient to prognosticate such occurrence.

The differential microscopic features of junction nevus and early nevocarcinoma are few. The differential diagnosis, although in some cases difficult, usually can be established. In early nevocarcinoma some embryonic or anaplastic cells are present. Frequently these cells may be demonstrated either coming off the epidermis in areas of the cell nests or in the subepidermic zones. Mitotic figures are usually but not always visible. There may be a mild inflammatory reaction in this stage, and changes in the amount of pigment are not significant.

In late nevocarcinoma practically all the cells are anaplastic; they are large and have a tendency to become round, and they vary in size and somewhat in shape. The cytoplasm is granular, not homogeneous; the cell walls are distinct, and the nuclei are increased in size.

In any consideration of nevocarcinoma the subject of trauma is emphasized. It is our opinion that the clinical changes previously mentioned may occur with or without trauma. Injury may be slow and gradual, as in shaving, combing, irritation from articles of clothing or exposure to pressure. On the other hand the trauma may be specific and rapid, as by a blow or bruise. It is impossible to foretell from the type of trauma the likelihood of subsequent malignant change; nor is it possible to correlate the type and degree of trauma with the type and degree of ensuing malignancy. Improper treatment of the junction nevus is a form of trauma and may be followed by early or late nevocarcinoma.

COMMENT

In the management of pigmented nevi it is of prime importance to establish an exact diagnosis. The clinical features of junction nevi and even of nevocarcinoma are not always diagnostic, and other dermatoses must often be considered. The other pigmented nevi probably offer the greatest difficulty in the clinical differential diagnosis.

Nevus pigmentosus, nevus pigmentosus et pilosus, nevus pigmentosus et verrucosus and the like are inadequate diagnoses. They give little information as to the true nature of the lesion, and several types of nevi can fit the same diagnosis. The common pigmented nevi are classified by Satenstein[6] as epithelial; those of epithelial origin, which includes the epidermic; the dermic and epidermic-dermic, or junction nevus, and mesenchymal, those of mesodermal origin represented by the blue nevus.

The epidermic pigmented nevus is superficial, raised, verrucous, light to deep brown color, from one to several centimeters in size, and usually has some long thick black hairs. The differentiation of this lesion from junction nevus offers little trouble.

The so-called common mole is usually an intradermic nevus classified clinically as nevus pigmentosus or, if it contains hair, nevus pigmentosus et pilosus. The common mole may occur on any part of the cutaneous surface with predilection for the face. There may be a single lesion; often they are multiple. The lesions may be flat, but usually they are elevated. In size they range from a few millimeters to one or more centimeters. The color may be that of normal skin or any shade of brown; hairs may or may not be present, and the surface is usually smooth. They usually develop early in life and remain stationary. When one is certain of the diagnosis of intradermic nevus, the consensus is that the mole can be let alone or treated in any conventional manner—by electrolysis, for instance.

Clinically the blue nevus is almost identical with the junction nevus, and a microscopic diagnosis is necessary to distinguish between them. We have not seen malignant change in a blue nevus.

Patients usually are advised to have the junction nevus removed by wide excision or to leave it untreated. The first results in unnecessary scarring and disfigurement, and the second is dangerous. As the junction nevus is the precursor of nevocarcinoma (a precancerosis) it should be removed, but the nevus is all that need be excised.

When malignant change develops there are different gradations, and the therapy and prognosis vary accordingly. It has been customary to regard the diagnosis of nevocarcinoma with despair. As previously mentioned, we divide the disease into early and late stages and believe that many cases of the early malignant stage can be cured and that the prognosis, while serious, is more hopeful. Here, the lesion should be removed by wide excision and followed at times by radiation therapy. In late nevocarcinoma the prognosis is grave, but radiation therapy and surgical measures should be tried, as this combination is successful at times.

From the foregoing histologic and brief clinical descriptions, it is evident that caution is necessary in the management of any lesion with features suggestive of a junction nevus. As previously indicated, there are many nevi, both cellular and noncellular, that are harmless; therefore a correct diagnosis is important. There are a number of features that clinicians have thought to be indicative of danger or safety. These consist of color, presence or absence of hair, flatness or elevation, character of the surface, the number of lesions, size, development in early life and subsequent quiescence. Unfortunately, none of these features is a safe guide, although each is of some help. As a rule there is no hair in a junction nevus. The color is more likely to be blue-black, black or slate gray than some shade of brown or normal skin color. The junction nevus may be flat, but more often it is elevated, single and small. The surface may be smooth, but it is more likely to be uneven. A change in size or in the surface is a danger sign.

When there is any doubt about the histologic type, we repeat that it is our opinion that the lesion should be excised or a biopsy performed.

SUMMARY

1. The junction nevus (melanoma, benign melanoma and so forth) is the only forerunner of the nevocarcinoma (melanoma, malignant melanoma and the like).

2. The nevus cannot always be diagnosed clinically, for many dermatoses may present similar features.

3. Biopsy is essential for a positive diagnosis and is attended by no danger if properly performed.

4. Junction nevus should be considered as a precancerosis and as such should not be left untreated. It should be removed to preclude completely the possibility of nevocarcinoma.

5. Nevocarcinoma is too inclusive and should be divided into early and late stages. Many cases of the early stage can be cured by wide excision and radiation therapy. In the late stage the prognosis is grave.

6 East Eighty-Fifth Street, New York.
999 Fifth Avenue, New York.
20417 Sheffield Avenue, Detroit.
27 West Eighty-Sixth Street, New York.

INTRATHORACIC GASTRIC CYSTS

EDGAR W. DAVIS, M.D.
Washington, D. C.
and
DAVID SALKIN, M.D.
Hopemont, W. Va.

Congenital intrathoracic mediastinal cysts may be classified as dermoid, teratomatous, pericardial, simple, lymphangiomatous, bronchial and alimentary. The alimentary group includes cysts which have esophageal, gastric or intestinal characteristics. To July 1946 the literature contained only 25 reports of cysts having gastric features. Eighteen of these showed only gastric mucosa and 7 cysts showed in addition esophageal, intestinal or even bronchial mucosa.

The first gastric cyst was reported by Staehelin-Burckhardt in 1909.[1] Prior to 1940, 11 such cysts were described.[2] Since then 14 more cases were added, and 12 of these occurred in the United States.[3] This greater frequency in the past seven years is due to the increasing use of the roentgen ray and to exploratory thoracotomy. The lag of case finding in other countries is probably due to the disruptions caused by the war, and more reports may be expected in the near future. Despite its rarity, the disease merits attention because it is amenable to surgical treatment.

From the Hopemont Sanitarium, Hopemont, W. Va., and the West Virginia University School of Medicine, Morgantown, W. Va.

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[2] (*a*) Mixter, C. G., and Clifford, S. H.: Congenital Mediastinal Cysts of Gastrogenic and Bronchogenic Origin, Ann. Surg. **90**: 714-729, 1929. Smith, R. E.: A Case of Mediastinal Dermoid Cyst in an Infant, Guy's Hosp. Rep. **80**: 466-469, 1930. Fischer, W.: Ueber eine Cyste in der Rechten Pleurahohle, Virchows Arch. f. path. Anat. **275**: 711-716, 1930. Entz, B., and Orosz, D.: Ueber die intrathorakalen Zystenbildungen, Frankfurt. Ztschr. f. Path. **40**: 229-246, 1930. Poncher, H. G., and Milles, G.: Cysts and Diverticula of Intestinal Origin, Am. J. Dis. Child. **45**: 1064-1078 (May) 1933. (*b*) Black, R. A., and Benjamin, E. L.: Enterogenous Abnormalities: Cysts and Diverticula, Am. J Dis. Child. **51**: 1126-1137 (May) 1936. (*c*) Boss, C.: Kongenitale, mit Magenschleimhaut ausgekleidete Mediastinalcyste mit in die Lunge penetrierendem chronischem Ulcus pepticum, Virchows Arch. f. path. Anat. **300**: 116-179, 1937. Guillery, H.: Eine in die Wirbelsaule eingewachsene mediastinale Zyste (Vorderdarmzyste), Zentralbl. f. allg. Path. u. path. Anat. **69**: 49-53, 1937-1938. Seydl, G. N.: Eine Kongenitale Magenwandcyste im Mediastinalraum mit in die Lunge perforiertem Ulcus pepticum, Frankfurt. Ztschr. f. Path. **52**: 346-354, 1938.

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REPORT OF CASE

History.—B. J. F., a white girl aged 14, was admitted to Hopemont Sanitarium with a chief complaint of pain in the right side of the chest. She had felt well up to the age of 7 years but then noted an insidious onset of a dull, aching pain in the right upper posterior portion of the chest. This pain recurred every four or five months and lasted two or three weeks. There was no radiation. She felt as though she lay on a mass the size of her hand. The last attack occurred one month prior to admission, at which time a roentgenogram was made which was suggestive of a tumor. She had no cough, expectoration, hemoptysis or dysphagia but was moderately dyspneic on mild exertion. The past history was noncontributory.

Examination.—The patient was a slender girl 62 inches (157 cm.) tall and weighed 91 pounds (41 Kg.). General physical examination of the head, neck, abdomen and nervous system revealed essentially normal conditions. The pulse rate was 90, the blood pressure was 110 systolic and 68 diastolic in each arm, and the heart showed no abnormalities. The respiratory rate was 22, and the patient manifested moderate dyspnea on slight exertion. The cutaneous veins of the thorax were prominent, and there was a mild scoliosis to the left side. The left hemithorax was normal. The right side showed dulness and absence of breath sounds over the upper two thirds of the chest posteriorly; the anterior surface showed impaired resonance and faint breath sounds over the upper portion; the lower third of the chest was normal.

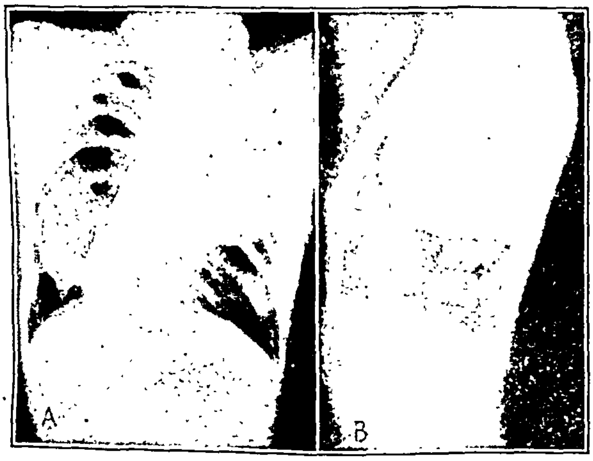

Fig. 1 (*A* and *B*).—Posteroanterior and lateral roentgenograms showing the tumor.

Urinalyses and blood studies were within normal limits. The sputum was negative for Mycobacterium tuberculosis, and serologic tests of the blood were negative for syphilis.

Roentgenologic studies included fluoroscopic examinations and films of the chest and spine, bronchograms and esophagrams (fig. 1). In the right side of the chest there was a 15 cm. oval, homogeneous, sharply defined mass occupying the upper two thirds of the chest and situated posteriorly. The heart was in normal position, but the trachea was displaced to the left side. Other roentgen observations included a thickened fissure between the upper and middle lobes of the right lung; calcification in the right tracheobronchial lymph nodes; a mild scoliosis of the dorsal spine with convexity to the left and centered at the sixth and seventh vertebrae; incomplete fusion of the arches and spinous processes of the seventh cervical and first dorsal vertebrae, and a mild erosion of the posteromesial segments of ribs three to six inclusive on the right side. Bronchograms revealed a pronounced compression of the lower trachea and the right stem bronchus, and the bronchus of the upper lobe of the right lung was completely occluded; the bronchi of the middle and lower lobes were normal. The esophagrams showed some displacement of the esophagus to the left but revealed no other abnormalities.

The clinical diagnosis was that of a tumor mass. It occupied the right hemithorax, originating in the posterior mediastinum, and probably was a neurofibroma.

Operation.—The tumor mass was removed Aug. 24, 1944 with the patient under endotracheal cyclopropane anesthesia. With the patient on the left side, a posterolateral incision was made, the seventh rib was removed and the pleural cavity was entered through the periosteal bed. The upper two thirds of the chest was so filled by a large, firm, brownish black mass that the sixth, fifth and fourth ribs had to be transected posteriorly to permit an adequate exposure. The mass was oval and corresponded to the roentgen measurements of 15 by 14 by 10 cm. Its anterior surface was densely adherent to the lung and, on freeing it, several dense black areas measuring 5 mm. were uncovered. One of these began to show an oozing of greenish black fluid, and then the fluid shot out with such force that it formed a stream of about 15 cm. in height. The mass was so hard that, until then, it was thought to be solid. The rest of the fluid was aspirated, and in all 1,000 cc. of it was collected. The first portion of the fluid was thin, but the last portion was thick and gritty. The wall of the cyst then contracted considerably the freed from the surrounding structures and rem p The pedicle was wide and was adherent to o

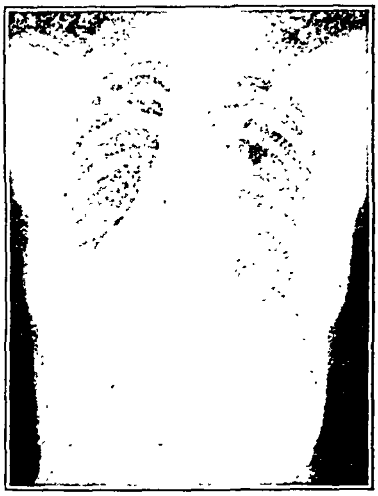

Fig. 2.—Roentgenograms of chest made May 14, 1946, or about twenty months postoperatively.

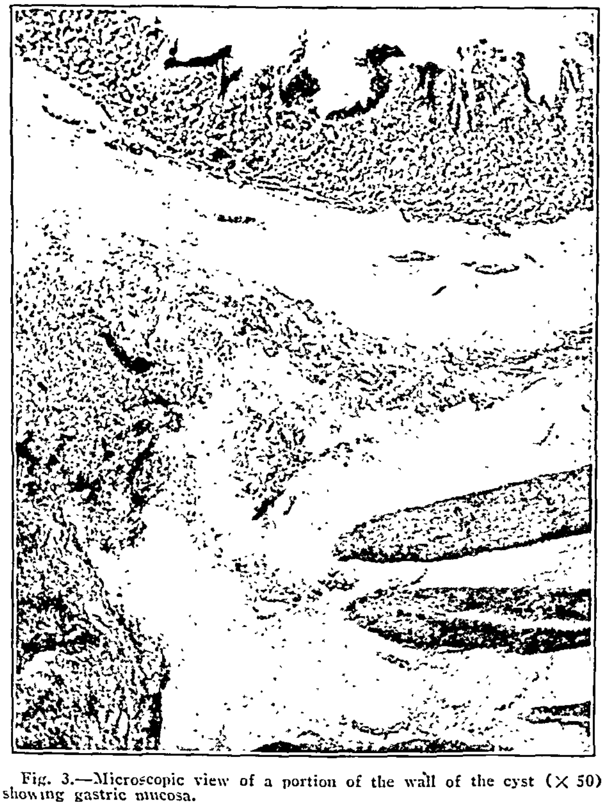

Fig. 3.—Microscopic view of a portion of the wall of the cyst (× 50) showing gastric mucosa.

fourth to the seventh inclusive, and from the vertebral bodies to the angles of the ribs. The lung was then inflated and the chest cage closed without drainage.

The postoperative course was uneventful. The cutaneous thoracic veins became less prominent, there was no dyspnea even on considerable exertion and the pain disappeared. Now, almost three years later, the girl is 65 inches (165 cm.) tall, weighs 135 pounds (61 Kg.), is very active and has no symptoms (fig. 2).

Pathologic Examination.—The specimen, preserved in solution of formaldehyde, was examined by the Army Institute of Pathology. The flattened cyst measured 10 cm. in diameter, and the wall varied from 2 to 5 mm. in thickness. The inner surface was mottled reddish black and white; the dark areas were composed of blood covering irregular shallow ulcers, and the light areas were smooth and resembled mucosa. One area near the pedicle measured 2 cm. and showed typical gastric folds.

Microscopic examination (fig. 3) revealed the white areas to consist of gastric mucosa mainly of the pyloric type. There was a distinct muscularis mucosa and submucosa. The muscularis was composed of two layers of smooth muscle; the outer layer was narrow and homogeneous and the inner layer was composed of numerous muscle bundles. In many areas the mucosa showed erosion and destruction. Hemorrhage was present in the submucosa and muscularis, and some of the old hemorrhagic areas showed occasional acicular cholesterin clefts and macrophages filled with pigment. Deposits of calcium were present in some sections. Numerous foci of lymphocytes and plasma cells occurred. One small intramural lymph node was also present. The vessels exhibited decided thickening of their walls and narrowing of the lumens. Rudimentary Meissner's and Auerbach's plexuses were present. In the periphery numerous bundles of nerves were seen. There was a layer of serosal cells covering part of the outer shaggy fibrous layer.

The pathologic diagnosis was gastric cyst with ulceration. Unfortunately, the fluid was contaminated with blood and was not saved for chemical examination.

REVIEW OF LITERATURE

Pathologic Data.—The cysts are located paravertebrally in the posterior mediastinum and expand retropleurally into either hemithorax; 18 cases occurred in the right side and 5 in the left; 3 were placed centrally. The cysts are spheric, oval or pyriform and are situated anywhere along the entire length of the mediastinum; they may occupy a small or large part of the thorax, depending on the size of the cyst and the age of the patient. The cysts described vary from 3 to 15 cm. in diameter. The cyst wall measures from 1 to 5 mm. in thickness and shows the regular alimentary layers. There is no serosa, but the reflected pleura resembles it. The muscularis shows two (and occasionally three) layers and may present ganglion cells, nerve trunks and sometimes calcification. The submucosa may show hemorrhage and an inflammatory exudate. The muscularis mucosa is well defined. The mucosa may be thrown into gastric folds and present deep branching glands, chief and parietal cells. Peptic ulcers occurred in 7 cases.

The cysts may be densely adherent to the adjacent structures and may show pressure effects on the mediastinal vessels, nerves, ribs and vertebrae. The esophagus may show pressure necrosis, and the lungs may present atelectasis, chronic pneumonitis and bronchiectasis. In 4 cases a peptic ulcer perforated through the cyst wall into a bronchus. The cyst fluid may assume any color and has been described as amber, greenish, yellowish, milky and brownish. It may be thin or gritty. It is usually acid but may be neutral and may contain hydrochloric acid and pepsin. The proportion of other anomalies in these cases is high and includes scoliosis, hemivertebrae, spina bifida and abdominal enteric cysts and diverticula.

There are three theories advanced to explain the origin of the cysts. Lewis and Thyng [4] have considered that the cysts are caused by an embryonic diverticulum or an outpocketing of epithelial nodules capable of producing gastric mucosa. Keith [5] has stated the opinion that they are caused by a failure of coalescence of the vacuoles in a transverse manner when the alimentary tube is in a solid state, resulting in a cyst which may or may not be closely attached to it. Black and Benjamin [2b] have expressed their belief that the cysts are intrathoracic vestiges of the vitelline duct.

Clinical Aspects.—The patients ranged from premature stillborn infants to adults 23 years of age, but 22 of the 26 patients were under 4 years of age. Five were stillborn or died shortly after birth, 9 were under 1 year of age and 8 more were under 4 years of age. The others were aged 10, 14, 15 and 23 years. The males showed a predominance, with 15 cases occurring in boys, 10 in girls, and the sex not stated in 1 case; however, this may not be the actual state of affairs, for there were 7 females in the 15 cases reported since 1940.

The common symptoms are dyspnea, cyanosis, cough and hemoptysis; the others include pleurisy, attacks of pneumonia, pain, regurgitation of food, hematemesis, dysphagia, fever and malaise. The symptoms are produced by the pressure of the cyst on the mediastinal vessels, and its effect on the lung and esophagus are as described. There are no specific signs, and in fact no signs may be present. The cyst itself results in dulness and absent breath sounds, and the presence of inflammation in the lung may result in altered breath sounds, dulness and rales. The heart is usually displaced to the opposite side.

The roentgen examination reveals a well defined, rounded, homogeneous shadow placed posteriorly. However, details may be obscured by pulmonary changes or by a pleural effusion. The lung may show compression, atelectasis or infiltrations. The heart and trachea may show displacement. Bronchograms may show evidence of bronchial displacement, obstruction and bronchiectasis; in 1 instance it showed a bronchocystic fistula. Esophagrams reveal only secondary changes such as displacement, but no case described manifested an intraluminal connection with the cyst. The bony thorax may show the anomalies and pressure effects described.

Bronchoscopic study may disclose narrowing of the trachea and bronchi due to extrinsic pressure and an inflamed mucosa and secretions resulting from pulmonary changes.

There is no specific means of diagnosing a gastric cyst except when it is aspirated erroneously and the fluid is found to resemble gastric juice. However, it should be suspected in cases in which there are other anomalies present.

TREATMENT

Surgical removal of the cyst is the only treatment. When symptoms are present the operative procedure should be performed as early as possible or as soon as it can be tolerated safely. If symptoms are not present and the child is under 2 or 3 years of age a program of close supervision may be instituted and the patient operated on if the mass shows an increase in size. However, thoracotomy should not be deferred after 3 years of age in asymptomatic cases, for the chances of complications are increased and the difficulties of removal greater. Simple aspiration of the cyst is not advisable.

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[5] Keith, A.: Human Embryology and Morphology, Baltimore, William Wood & Company, 1933.

Of the 26 cases reported, 9 were diagnosed at autopsy. Surgical intervention was performed in 17 cases and was successful in 10. The youngest patient with successful removal of the cyst was 3 weeks of age when the operation was performed. The surgical procedure of choice is the complete excision of the cyst in one stage. However, the two stage operation of Ladd and Scott is advisable when there is a close attachment of the cyst to the esophagus (to avoid an esophageal fistula) and when the patient's condition is poor. In such instances the first stage consists in freeing the cyst, sewing it to the pleura of the wound and incising it (marsupialization); the second stage consists in either a later excision of the sinus or destruction of the mucosa by gauze packing and curettement, allowing the sinus to become granulated and obliterated. If there is an associated diseased lobe of the lung, it may also be removed.

Of the successful 10 cases, 7 cysts were excised in one stage. Of the 7 unsuccessful cases, 5 patients died as a direct result of the operation and 1 died as a result of a recurring esophagopleural fistula; 1 patient died from pneumonia several months after unsuccessful surgical intervention, death actually being due to nonsurgical causes.

SUMMARY

A case of a congenital intrathoracic mediastinal gastric cyst is reported, and the literature is briefly reviewed. Although intrathoracic mediastinal gastric cysts are rare, they are being discovered with increasing frequency and are amenable to surgical cure.

Clinical Notes, Suggestions and New Instruments

TESTS FOR DETERMINING THE VIABILITY OF STRANGULATED BOWEL

MANUEL E. LICHTENSTEIN, M.D.
Chicago

It is the purpose of this note to call attention to the value of oxygen inhalation in determining the viability of strangulated bowel, lest this simple but useful test be relegated to oblivion. Changes in color and vascular pulsations following the inhalation of pure oxygen have been a test for viability of the bowel for many years, but on inquiry I find that this test is not made use of as frequently as is warranted.

The recognition of the viability of bowel after strangulation in a hernial sac is of importance because thereby an unnecessary resection of the bowel may be avoided and the prognosis may be improved.[1] When the use of warm compresses to improve the circulation is followed by a change in color, restoration of pulsations and return of peristalsis this indication is of therapeutic and diagnostic importance. Failure to respond to this test after a period of time is evidence of nonviability, and resection of the bowel is indicated.

Recently tests have been introduced to determine more promptly the viability of strangulated bowel.[2] Injection of fluorescein intravenously with observation of the affected bowel through a purple light has the advantage of giving an immediate answer to the question. In addition the vasodilator drugs used in peripheral vascular disease have been used to overcome the vasospasm which is frequently associated with strangulation. This test is of diagnostic and therapeutic importance since vasodilators injected locally or systemically improve the circulation by restoring pulsations in the contracted vessels.[2a]

One of the most delicate tests for viability of the bowel is the observance of a change in the color of the bowel concomitant with the inhalation of 100 per cent oxygen. This test may be applied with the patient under local, regional, spinal or general anesthesia. The immediate change of a dusky-colored bowel to a bright pink is an indication that blood is circulating through the wall of the bowel, and viability is assured. Oxygen not only causes the change in color but also aids in the recovery of the damaged segment of bowel. Vascular spasm is diminished or abolished by oxygen, and the pulsations in the involved vessels become fuller and more vigorous. When vascular obstruction or infarction has already ensued following strangulation, the absence of color change and vascular pulsation following the inhalation of oxygen suggests the lack of viability of the bowel. Resection of the involved segment should be performed without further delay.

The dangers incident to a resection of the bowel are not as imposing now as they have been in the past. The use of whole blood transfusions, antibiotics and sulfonamide compounds has to a considerable extent eliminated shock, hemorrhage and infection as causes of failure. Use of parenteral fluids for hydration, mineralization and nutrition and of intestinal intubation for decompression has also improved the patient's prospects for recovery. Satisfactory methods of anesthesia and better technical skill have added to the safety factors in intestinal resection. In the borderline case, in which doubt exists as to the degree of viability, no matter what test is employed the decision to resect the bowel will rest not alone on the results of the test but on the general condition of the bowel. It has been observed[3] that after reduction of a strangulated but viable loop of intestine complete resolution does not always occur. Hemorrhage into the wall of the bowel, edema and deposits of plastic exudate may result in the organization of scar tissue with fibrosis and stenosis, kinking or simple stricture. These changes result in obstruction at a later date and may require short-circuiting operations or resection of the involved segment of bowel.

A segment of bowel that has such doubtful viability that prolonged testing is necessary is not likely to survive, or it may become the seat of serious organic changes. Thus the decision to resect the damaged segment will frequently be influenced by the experience of the surgeon who is viewing the bowel.

After section of the bowel preparatory to anastomosis, doubt may at times arise in the mind of the surgeon concerning the viability of the cut surface to be anastomosed. Here, too, not only will the inhalation of 100 per cent oxygen give a change in color but bright blood will be seen coming from the cut surface. These changes will not be noted when the supply of blood to the cut surface is impaired.

SUMMARY

In the critical case in which the need for differentiation between viable and nonviable bowel is most desirable, clinical judgment has determined the need for resection of the bowel. The use of tests to determine viability have been helpful. The inhalation of 100 per cent oxygen results in a prompt change in color in viable bowel. Other tests are available, but all of them must be viewed in the light of the total damage to the bowel.

25 East Washington Street.

From the Division of Surgery, Northwestern University Medical School, and the Cook County, Norwegian American and Michael Reese hospitals.

[1] McNealy, R. W.; Lichtenstein, M. E., and Todd, M. C.: The Diagnosis and Management of Incarcerated and Strangulated Femoral Hernia, Surg., Gynec. & Obst. **74**: 1005 (May) 1942.

[2] Herrlin, J. O., Jr.; Glasser, S. T., and Lange, K.: New Methods for Determining the Viability of Bowel, Arch. Surg. **45**: 785 (Nov.) 1942.

[2a] Madsen, L. S.: The Use of Papaverine Hydrochloride in Mesenteric Embolism, California & West. Med. **52**: 176, 1940.

[3] Barry, H. C.: Fibrous Stricture of the Small Intestines Following Strangulated Hernia, Brit. J. Surg. **30**: 64 (July) 1942.

PNEUMONIA DUE TO PROTEUS MIRABILIS TREATED WITH PENICILLIN AND STREPTOMYCIN

LOWELL D. SNORF, M.D.
LEONARD SHEPANEK, M.D.
ELIOT E. FOLTZ, M.D.
and
HARRY HARDING, M.D.
Evanston, Ill.

Many cases of dysentery and infections of the urinary tract caused by organisms in the Proteus group have appeared in the literature.[1] These are low grade infections and carry a low mortality rate. Less frequently have otitis media, septicemia and abscess of the brain been due to these organisms.[1] The mortality rate in these cases, however, has been high. The only other reported cases of pulmonary involvement due to Proteus organisms have been 2 cases of pleurisy and 1 case of multiple pulmonary abscesses, all of which were fatal.[2] No previous report of pneumonia due to a Proteus organism could be found.

REPORT OF CASE

History.—A white woman aged 63, married, was admitted to the Evanston Hospital on June 13, 1946 with complaints of chills, vomiting, nausea and diarrhea for one week. In addition she had complained for three years of a severe backache, which was gradually getting worse. Her past and family history were essentially negative.

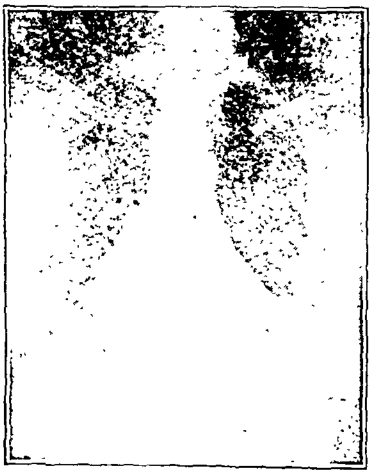
Fig. 1.—Consolidation in the base of the right lung.

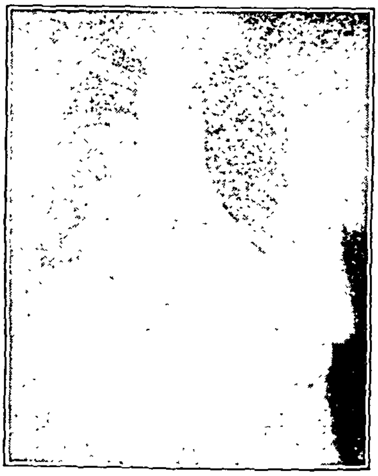
Fig. 2.—Spread of the area of consolidation in the right lung.

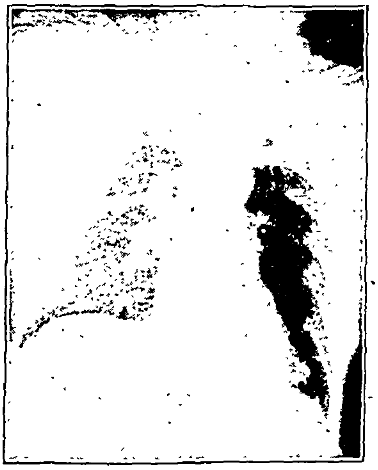
Fig. 3.—New area of consolidation.

Examination.—Physical examination on admission revealed an obese, pasty-complexioned white woman with a temperature of 99.4 F. orally. Her back pain could be exaggerated when active or passive motion of the lower extremities was tried. There was tenderness to palpation in the right upper quadrant of the abdomen but no rebound tenderness. The liver could be felt 1 cm. below the right costal margin with a deep inspiration. The kidneys and spleen were not palpable. There was no detectable fluid in the abdomen. The lungs were clear and resonant. Other physical observations were also normal.

Laboratory Data.—On admission the white blood cell count was 14,800 per cubic millimeter with a preponderance of polymorphonuclear cells and a shift to the left. The sedimentation rate was 100 mm. in one hour. (Westergren). (In the urine were many red and white blood cells.) A cholecystogram demonstrated an inability of the gallbladder to concentrate the dye and a number of round, dense shadows in the region of the gallbladder, which probably represented stones. Roentgen examination of the spine did not show any evidence of disease of the bones or joints. On admission, cultures of the urine and feces were positive for Proteus mirabilis. (In addition the patient's serum in a dilution of 1:320 agglutinated this organism.)

Course of the Illness.—The patient was treated symptomatically and ran a febrile course, which on June 24, eleven days after admission, went up to 103.6 F. orally. The following day clinical evidence of consolidation in the base of the right lung was observed. This was confirmed by a roentgenogram (fig. 1). At this time, because of the pneumonia and because the patient was known to be sensitive to sulfonamide compounds, penicillin therapy was started at the rate of 160,000 units a day.

Blood cultures on July 1 and 3 were positive for P. mirabilis. The patient improved clinically, and the temperature began to approach normal (fig. 4), but on July 9 the patient apparently had an exacerbation of her pneumonia. The temperature spiked to 104 F. orally, and clinical and roentgenologic evidence (fig. 2) showed the consolidation in the right lung to be spreading.

At this point it was felt that since P. mirabilis was found in the urine, feces and blood this organism might well be the etiologic agent for the pneumonia. Because large doses of penicillin have been found to be much more effective than the usual dose in controlling infections due to the coli-aerogenes group,[3] the dosage of penicillin was increased to 1,300,000 units daily. A sputum culture on July 12 was negative for P. mirabilis. The following day, four days after instituting massive penicillin therapy, a blood culture and a sputum culture were positive for this organism. Because blood and sputum cultures remained positive after massive doses of penicillin had been administered, and because, although the patient improved clinically, a new area of consolidation was observed roentgenologically (figs. 3 and 5), a request for streptomycin was made. Treatment with this antibiotic was started on July 23. A total of 10 Gm. was given at the rate of 2 Gm. a day for five days. In vitro tests had demonstrated that for complete inhibition of the growth of this organism a concentration of 0.5 mg. of streptomycin per cubic centimeter or 200 units of penicillin per cubic centimeter was necessary.

Clinical improvement correlated well with the results of the bacteriologic studies. The patient improved gradually from about the fifth day of massive penicillin therapy until her discharge. Cultures of blood, feces and urine were negative from about four days after the start of massive penicillin therapy. (fig. 4). The pneumonia did not completely resolve until the fourth day after the cessation of streptomycin therapy, and it was at this time that the sputum cultures became negative.

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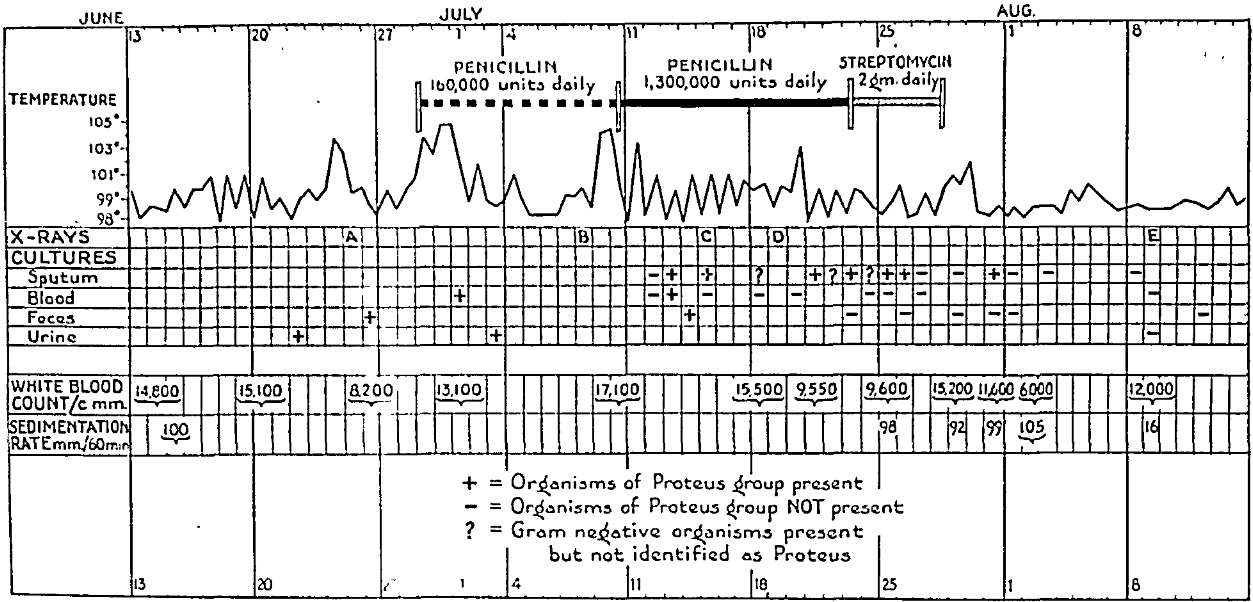

Fig. 4.—Clinical data. Letters A, B, C, D and E (x-rays) correspond to figures 1, 2, 3, 5 and 6.

The patient was discharged from the hospital on August 12 after a hospitalization of sixty days; she was free from all her former complaints. At this time the roentgenogram of the chest had disclosed normal conditions (fig. 6) and the sputum culture had been negative for P. mirabilis for a period of two weeks (fig. 4). Cultures of the blood, feces and urine were likewise negative for this organism. Follow-up studies in the outpatient department for eight months after discharge have shown the patient to remain free of symptoms, to have negative cultures of blood, sputum, urine and feces and to have normal lungs both clinically and roentgenologically.

COMMENT

That the pneumonia in this patient was due to P. mirabilis seems evident from the following: there was a systemic infection with this organism, including a septicemia; the distribution of the consolidation was unusual, and—most important—no pathogenic organism other than P. mirabilis could be found on complete examination of the sputum, and simultaneously with the resolution of the pneumonia this organism disappeared from the sputum.

In the past Proteus infections have been treated most successfully with autogenous vaccines and sulfapyridine.[4] The value of penicillin has been doubtful,[5] but organisms of the Proteus group have been found sensitive to streptomycin.[6] The fact that, in vitro, 200 units of penicillin per cubic centimeter or 0.5 mg. of streptomycin per cubic centimeter were required to inhibit the growth of the organism in this case indicated that this strain of P. mirabilis was decidedly resistant to these agents.[7] For example, the Committee on Chemotherapeutics and Other Agents, National Research Council,[6c] has stated that when as large a dose as 0.6 Gm. of streptomycin is given intravenously, the maximum blood concentration attained is only 26 micrograms per cubic centimeter, far short of the amount required to be effective in this case. Therefore, if these antibiotics exerted any beneficial effect it was most likely in the prevention or control of secondary infections.

It was felt that the backache was independent of involvement of the gallbladder and kidneys, and roentgenograms of the spine were negative. The backache was apparently secondary to obesity and faulty posture and was relieved by rest.

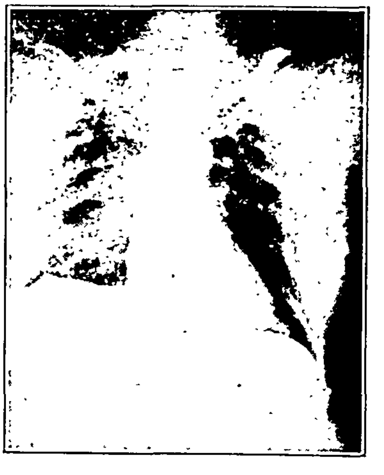

Fig. 5.—Same as figure 3.

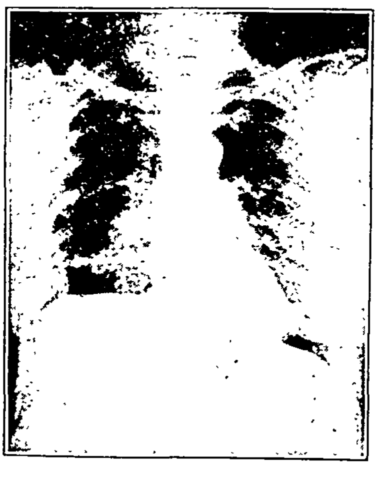

Fig. 6.—Return of lungs to normal.

SUMMARY

A rare case is reported, an infection of the urinary and gastrointestinal tracts, the blood stream and the lungs caused by Proteus mirabilis. The organism was isolated from the feces, urine, blood stream and sputum. Neither penicillin nor streptomycin apparently exerted a direct effect on the primary infection. The patient recovered after an illness of approximately sixty-seven days. We have been unable to find in the literature any other case of pneumonia due to an organism of the Proteus group.

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[4] Deshans, A.: Septicemia Caused by Proteus Vulgaris: Cure of a Case by Autovaccine Therapy, Montpellier méd. **6:** 201-206 (Oct. 15) 1934. McKee.[1]

[5] Schmitt, G. F.: Penicillin: A Review of the Literature Through 1943, Am. J. M. Sc. **207:** 661-678 (May) 1944. Dawson, M. H.; Hobby, G. L.; Meyer, K., and Chaffee, E.: Penicillin as a Chemotherapeutic Agent, Ann. Int. Med. **19:** 707-717 (Nov.) 1943. Hobby, G. L.; Meyer, K., and Chaffee, E.: Activity of Penicillin in Vitro, Proc. Soc. Exper. Biol. & Med. **50:** 277-280 (June) 1942.

[6] (a) Nichols, D. R., and Herrell, W. E.: Streptomycin, J. A. M. A. **132:** 200-206 (Sept. 28) 1946. (b) Buggs, C. W.; Bronstein, B.; Hirshfeld, J. W., and Pilling, M. A.: The In Vitro Action of Streptomycin on Bacteria, ibid. **130:** 64-67 (Jan. 12) 1946. (c) Keefer, C. S.: Streptomycin in the Treatment of Infections, ibid. **132:** 70-77 (Sept. 14) 1946.

[7] Ory, E. M.; Harris, W.; Meads, M.; Wilcox, C., and Finland, M.: Bacteriologic Studies of the Sputum in Patients with Pneumococcal Pneumonia Treated with Penicillin, J. Lab. & Clin. Med. **31:** 409-422 (April) 1946. Anderson, P. M.: A Note on the Use of Penicillin in the Laboratory Diagnosis of Whooping Cough, M. J. Australia **1:** 244-245 (Feb. 23) 1946. Waksman, S. A., and Schatz, A.: Streptomycin—Origin, Nature, and Properties, J. Am. Pharm. A. (Scient. Ed.) **34:** 273-291 (Nov.) 1945. West, M. G.; Doll, E. R., and Edwards, P. R.: Inhibition of Salmonella Cultures by Streptomycin, Proc. Soc. Exper. Biol & Med. **60:** 363-364 (Dec.) 1945. Buggs, Bronstein, Hirshfeld and Pilling.[6b]

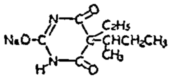
Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

AUSTIN SMITH, M.D., *Secretary.*

BUTABARBITAL SODIUM.—Butisol Sodium-McNeil.—Sodium 5-ethyl-5-sec.-butyl barbituric acid.—Sodium 5-ethyl-5 (1-methyl propyl) barbiturate. — $C_{10}H_{15}N_2O_3Na$.—M. W. 234.23.



Actions and Uses.—Butabarbital sodium produces pharmacologic actions similar to other barbiturates. With average doses the rapidity and duration of its action is intermediate between the fast-acting derivative, pentobarbital, and the longer-acting barbital and phenobarbital. Following oral administration the drug usually exerts initial effects within thirty minutes. Sedation is sustained for approximately five to six hours. It is thus suited for the production of a relatively mild and more continuous depression than can be obtained with the shorter-acting barbituates, yet its action is less prolonged than with barbital or phenobarbital.

Butabarbital sodium is destroyed fairly rapidly in the body, probably in the liver. It is not excreted as such in the urine except with excessive doses and therefore is not contraindicated in the presence of renal disease. Experimental studies indicate it to be essentially nontoxic for the liver. Its therapeutic coefficient is approximately equal to that of pentobarbital and greater than that of phenobarbital.

Butabarbital sodium is used orally as a simple sedative or hypnotic and for preoperative sedation and obstetric hypnosis. Essentially the same clinical precautions to avoid side effects should be observed as for other barbiturates.

Dosage.—Orally: sedative, 8 to 60 mg.; hypnotic, 45 mg. to 0.2 Gm., depending on the purpose and the patient. In general the duration of action is dependent on the size of the dose and the size of the patient. The average oral adult sedative dose is 30 mg.; the average hypnotic dose, 0.1 Gm.

Tests and Standards.—

Butabarbital sodium occurs as a white, bitter-tasting powder. It is soluble in water (1 in 2) and in alcohol (1 in 6.7); practically insoluble in dry ether and in benzene. The pH of a 1 per cent solution is from 9.0 to 10.2.

Dissolve about 0.5 Gm. of butabarbital sodium in 100 cc. of water and acidify the solution with diluted hydrochloric acid. Allow the ethyl sec.-butyl barbituric acid to crystallize from solution, collect it on a filter, wash with water and dry at 100 C.: the crystals melt at 165-168 C.

Incinerate about 0.1 Gm. of butabarbital sodium: the residue responds to tests for sodium carbonate. Dissolve about 0.3 Gm. of butabarbital sodium in 10 cc. of water and divide into two portions; to one portion add 1 cc. of mercuric chloride solution: a white precipitate results, soluble in an excess of ammonia; to the other portion add 5 cc. of silver nitrate solution: a white precipitate results, soluble in an excess of ammonia.

Dissolve about 0.5 Gm. of butabarbital sodium in 5 cc. of sulfuric acid: no more color is produced than that of matching fluid A (U.S.P.) Dissolve about 0.25 Gm. of butabarbital sodium in 25 cc. of water. Add 5 cc. of diluted nitric acid, allow to stand ten minutes and filter. Separate 10 cc. portions of the filtrate yield no greater opalescence on addition of 0.5 cc. of silver nitrate solution than that produced by 0.25 cc. of tenth-normal hydrochloride acid in 50 cc. of water (*chloride*) and no turbidity on addition of 1.0 cc. of barium chloride solution (*sulfate*).

Dissolve 2.0 Gm. of butabarbital sodium in 42 cc. of water and add slowly, with stirring, 8 cc. of normal hydrochloric acid. Filter, rejecting the first 5 cc. of the filtrate: 25 cc. of the filtrate shows no more heavy metals than 30 parts per million (U.S.P.).

Shake 0.5 Gm. of butabarbital sodium with 20 cc. of anhydrous ether for ten minutes, decant the ether through a filter, evaporate the ether in a tared dish, and dry the residue at 100 C.: the weight of the residue does not exceed 3 mg. (*uncombined butabarbital*).

Dry about 1.0 Gm. of butabarbital sodium, accurately weighed, at 100 C. for twenty hours: the loss in weight is not more than 5 per cent.

Dissolve about 0.5 Gm. of butabarbital sodium, accurately weighed, in 10 cc. of water in a separator, add to the solution 15 cc. of diluted hydrochloric acid and extract the liberated butabarbital with eight successive portions of ether, using 25 cc., 20 cc., 20 cc., 10 cc., 10 cc., 10 cc., 10 cc. and 10 cc., respectively. Wash the combined ether extracts with two 5 cc. portions of distilled water. Evaporate the washed ether extract in a tared dish or beaker at a low temperature in a stream of warm air, and dry the residue at 100 C. for two hours: the weight of the residue corresponds to not less than 89 per cent or more than 91 per cent of the sample taken, calculated on the moisture-free basis.

MCNEIL LABORATORIES, INC., PHILADELPHIA

Capsules Butisol Sodium: 0.1 Gm.

Tablets Butisol Sodium: 8 mg., 15 mg. and 50 mg.

Elixir Butisol Sodium: 0.2 Gm. per 30 cc. Butisol Sodium dissolved in a flavored elixir containing 7 per cent alcohol.

U. S. Trademark 378,610.

AMINOPHYLLINE (See New and Nonofficial Remedies, 1947, p. 305).

The following additional dosage form has been accepted:

PREMO PHARMACEUTICAL LABORATORIES, INC., NEW YORK

Suppositories Aminophylline: 0.5 Gm. in a water soluble Carbowax base.

AMPHETAMINE SULFATE (See New and Nonofficial Remedies, 1947, p. 209).

The following additional dosage form has been accepted:

SMITH, KLINE & FRENCH LABORATORIES, PHILADELPHIA

Capsules Benzedrine Sulfate: Amphetamine sulfate, 5 mg.

DIETHYLSTILBESTROL (See New and Nonofficial Remedies, 1947, p. 347).

The following additional dosage form has been accepted:

PREMO PHARMACEUTICAL LABORATORIES, INC., NEW YORK

Diethylstilbestrol (in peanut oil): 0.2 mg. per cc.; 1 cc. ampuls.

ETHINYL ESTRADIOL (See New and Nonofficial Remedies, 1947, p. 352).

The following additional dosage form has been accepted:

SCHERING CORPORATION, BLOOMFIELD, N. J.

Estinyl (Liquid): 125 cc. and 500 cc. bottles. Each 4 cc. contains ethinyl estradiol 0.03 mg. with 20 per cent alcohol.

METHENAMINE (See New and Nonofficial Remedies, 1947, p. 116).

The following dosage form has been accepted:

ABBOTT LABORATORIES, NORTH CHICAGO, ILL.

Tablets Methenamine: 0.3 Gm. and 0.5 Gm.

PENICILLIN (See New and Nonofficial Remedies, 1947 p. 144).

The following additional dosage forms have been accepted:

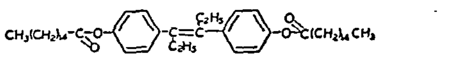
THE WM. S. MERRELL CO., CINCINNATI

Crystalline Penicillin G Sodium in Oil and Wax 300,000 units per cubic centimeter, 10 cc. vials. Sodium penicillin G suspended in peanut oil, containing 4.8 per cent whit wax, U. S. P.

WYETH INCORPORATED, PHILADELPHIA

Penicillin Calcium in Oil and Wax: 300,000 units pe cubic centimeter, 10 cc. vials. Calcium penicillin suspended i peanut oil containing 4.8 per cent white wax, U. S. P.

STILPALMITATE.—Diethylstilbestrol *di*palmitate.—Th *di*palmitic acid ester of diethylstilbestrol.—$C_{50}H_{80}O_4$.—M. W 745.14. The structural formula of diethylstilbestrol *di*palmitat may be represented as follows:



Actions and Uses.—The actions and uses of stilpalmitate are essentially those of diethylstilbestrol except that the absorption of stilpalmitate is slower. This delay in absorption permits a more prolonged therapeutic effect and is believed to lessen unpleasant side effects.

The contraindications for this preparation are the same as those for all substances with estrogenic action.

Dosage.—Stilpalmitate is given by intramuscular injection only. The usual dose is 5 mg. in terms of the diethylstilbestrol content. As with other estrogens, individual patient response will vary considerably as to rapidity of symptom relief and duration of effect. In the treatment of menopausal symptoms it is suggested that 5 mg. of diethylstilbestrol as the *di*palmitate ester be injected every five to seven days for three to five doses, or until the patient obtains satisfactory relief. Treatment is then interrupted until symptoms recur. At that time injections may be repeated at five to seven day intervals until symptoms are again relieved. The duration of symptomatic relief between dosage periods will vary from four to twelve weeks.

Lactation may be suppressed during the puerperium by the injection of 10 mg. of diethylstilbestrol as the *di*palmitate ester on the day of delivery and 5 mg. on the first and second postpartum days.

Ampuls must be immersed in hot water to dissolve the stilpalmitate, which is insoluble at room temperature. The drug will remain in solution at body temperature.

Tests and Standards.—

Stilpalmitate occurs as a white to yellowish, odorless, waxy, crystalline powder. It is practically insoluble in water; slightly soluble in alcohol; sparingly soluble in fatty oils at room temperature, but dissolves more freely on warming; soluble in ether and in chloroform. It melts between 81 and 85 C.

Dry about 0.25 Gm. of stilpalmitate over concentrated sulfuric acid in a vacuum desiccator for twenty-four hours: the loss in weight is not more than 0.1 per cent.

Transfer about 13.85 *mg. of diethylstilbestrol di*palmitate, accurately weighed, to a 125 cc. Erlenmeyer flask. Add 10 cc. of alcohol and 3 drops of concentrated sulfuric acid. Hydrolyze in a boiling water bath under a reflux condenser for two hours. Transfer the solution quantitatively to a 100 cc. volumetric flask and make up to volume with alcohol. To 5 cc. of the hydrolyzed solution in a 100 cc. volumetric flask, add 5 cc. of distilled water, 2 cc of diluted hydrochloric acid, 4 cc. of molybdophosphotungstate test solution (U.S.P.) and 50 cc. of distilled water. Allow to stand for ten minutes, then add 10 cc. of a 25 per cent aqueous solution of anhydrous sodium carbonate; dilute to exactly 100 cc., *mix* well and allow to stand for forty-five minutes. Filter the solution through a dry filter, rejecting the first portion of the filtrate. Treat a 5 cc. portion of diethylstilbestrol standard solution (10 mg. of diethylstilbestrol U. S. P. Reference Standard in alcohol to make 200 cc.) with the same quantities of reagents and in the same manner as the sample being tested. Treat a 5 cc. portion of alcohol in the same manner. This constitutes the blank. Determine the optical density of the solutions in a suitable photoelectric colorimeter or spectrophotometer at a wavelength of about 5,500 angstroms, using the blank as 100 per cent transmission. Calculate the quantity of diethylstilbestrol represented in the unknown: the diethylstilbestrol content is not less than 34.5 per cent nor more than 37.5 per cent.

Abbott Laboratories, North Chicago, Ill.

Stilpalmitate in Oil: 1 cc. ampuls. Ampuls containing 7 mg. of stilpalmitate per cc. or 14 mg. of stilpalmitate per cc., dissolved in peanut oil.

BENZESTROL (See New and Nonofficial Remedies, 1947, p. 347).

The following additional dosage form has been accepted:

Schieffelin & Co., New York

Benzestrol Elixir: 473 cc. bottles. Each 4 cc. contains benzestrol 2 mg. in a sweetened aromatic elixir containing alcohol 25 per cent.

PARENAMINE (See New and Nonofficial Remedies, 1947, p. 383).

The following dosage form has been accepted:

Frederick Stearns & Co., Detroit

Parenamine 15% Solution: Bottles of 100 cc. contain 15 Gm. of casein hydrolysate, consisting essentially of amino acids, per hundred cubic centimeters of solution.

ETHYLSTIBAMINE (See New and Nonofficial Remedies, 1947, p. 154).

The following dosage form has been accepted:

Winthrop Chemical Co., Inc., New York

Neostibosan: 0.3 Gm. ampuls.

U. S. patent 1,988,632. U. S. trademark 400,894.

PYRIDOXINE HYDROCHLORIDE (See New and Nonofficial Remedies, 1947, p. 516).

The following dosage form has been accepted:

U. S. Vitamin Corporation, New York

Solution Pyridoxine Hydrochloride: 50 mg. per cc., 10 cc. vials. Preserved with 0.5 per cent chlorobutanol.

DIGITOXIN (See New and Nonofficial Remedies, 1947, p. 250).

The following dosage forms have been accepted:

Wyeth Incorporated, Philadelphia

Purodigin Injection: 1 cc. ampuls. Each cubic centimeter contains 0.2 mg. of digitoxin *in 40 per cent alcohol solution.*

Tablets Purodigin: 0.1 mg. and 0.2 mg.

U. S. trademark 411,271.

ESTROGENIC SUBSTANCES (Water Insoluble) (See New and Nonofficial Remedies, 1947, p. 343).

The following dosage forms have been accepted:

Endo Products, Inc., Richmond Hill, N. Y.

Solution Estromone in Oil: 1 cc. ampuls and 10 and 25 cc. vials. Each cubic centimeter contains estrogenic substances equivalent to 2,000, 5,000, 10,000 or 20,000 international units of estrone in sesame oil. The 10 cc. and 25 cc. vials contain 0.5 per cent chlorobutanol as preservative.

U. S. trademark 345,724.

Premo Pharmaceutical Laboratories, Inc., New York

Solution of Estrogenic Substances: 1 cc. ampuls and 10 cc., 20 cc. and 30 cc. vials, containing the equivalent of 10,000 international units and 20,000 international units per cubic centimeter and 10 cc., 20 cc. and 30 cc. vials containing the equivalent of 25,000 international units per cubic centimeter of estrone in sesame oil with 0.5 per cent chlorobutanol as preservative.

Warren-Teed Products Company, Columbus, Ohio

Solution Estrovarin (in Oil): 15 cc. vials. Each cubic centimeter contains estrogenic substances equivalent to 10,000 international units of estrone in sesame oil, with chlorobutanol 0.5 per cent as a preservative.

DIPHENHYDRAMINE HYDROCHLORIDE (See New and Nonofficial Remedies, 1947, p. 19).

The following dosage form has been accepted:

Parke, Davis & Co., Detroit

Kapseals Benadryl Hydrochloride: 50 mg.

Elixir Benadryl Hydrochloride: 473 cc. Each hundred cubic centimeters contains benadryl hydrochloride 0.25 Gm. in an elixir containing alcohol, glycerin and water, with sugar, flavoring oils and added color. Each 4 cc. contains 10 mg. of benadryl hydrochloride.

U. S. trademark 416,252.

STIBAMINE GLUCOSIDE (See New and Nonofficial Remedies, 1947, p. 155).

The following dosage form has been accepted:

Burroughs Wellcome & Co., New York

Neostam Stibamine Glucoside: 0.1, 0.2 and 0.5 Gm. vials. Each vial contains the stated quantity of stibamine glucoside hermetically sealed under nitrogen to preserve stability.

ASCORBIC ACID (See New and Nonofficial Remedies, 1947, p. 517).

The following dosage form has been accepted:

U. S. Vitamin Corporation, New York

Tablets Ascorbic Acid: 25 mg., 50 mg. and 100 mg.

MENADIONE (See New and Nonofficial Remedies, 1947, p. 533).

The following dosage forms have been accepted:

U. S. Vitamin Corporation, New York

Solution Menadione in Oil, 1 mg. per cc.: 1 cc. ampuls. Each cubic centimeter contains 1 mg. of menadione in corn oil.

Capsules Menadione: 1 mg. and 2 mg.

RIBOFLAVIN (See New and Nonofficial Remedies, 1947, p. 511).

The following dosage form has been accepted:

U. S. Vitamin Corporation, New York

Tablets Riboflavin: 1 mg. and 5 mg.

OLEOVITAMIN A (See New and Nonofficial Remedies, 1947, p. 502).

The following dosage form has been accepted:

Premo Pharmaceutical Laboratories, Inc., New York

Vitamin A Capsules: Each capsule contains 25,000 U. S. P. units of vitamin A derived from natural fish liver oils.

NICOTINIC ACID (See New and Nonofficial Remedies, 1947, p. 512).

The following dosage form has been accepted:

U. S. Vitamin Corporation, New York

Tablets Niacin: 25 mg., 50 mg. and 100 mg.

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SATURDAY, SEPTEMBER 27, 1947

PROGRESS OF BREAD AND FLOUR ENRICHMENT

The enrichment of white bread and flour was started in May 1941 in about 30 per cent of the nation's output as a voluntary practice of bakers and millers. By late 1942 the percentage affected had risen to 75 or 80. However, the fraction not enriched included most of the low priced flours, destined for low income groups which stood in greatest need of this nutritional benefit.

South Carolina first sought to meet this situation by compulsory legislation which became effective Aug. 1, 1942. Five other Southern states followed this example in 1943 and 1944. The movement spread west and north in 1945 to include twelve more states. During 1946-1947 the total has risen to twenty-one states.[1] Perhaps it would be much higher but for the vigorous opposition of the American Dry Milk Institute. The opposition has been predicated on the assumption that enrichment encourages omission of nonfat milk solids from bread. However, convincing evidence has not been submitted to indicate that this is true.

The proponents of enrichment on the Food and Nutrition Board of the National Research Council all have been earnest advocates of the use of milk in bread. They believe that the war shortages of milk solids due to exports to Britain account for whatever reduction occurred in the use of milk in bread. Bakers use milk solids in bread to improve texture and delay staling as well as for nutritional values. Bakery use constitutes much the most important outlet for nonfat milk solids. It is questionable wisdom for the American Dry Milk Institute to oppose enrichment legislation, thus offending their largest customers and most nutritionists.

Nonfat milk solids as well as yeast, wheat germ, salt, fat and sugar are permissible ingredients in all bread, both enriched and unenriched. The practice of using nonfat milk solids in loaf breads was already well established before enrichment began, and it continues unabated. Little loaf bread is made without milk solids, and the total milk solids used in enriched bread is probably five times that used in unenriched bread today. It is therefore absurd to say, as has been said, that the product of the farms is being displaced by the product of the chemical factory. So-called water breads, typified by Vienna and Italian style breads, do not employ milk solids, as they would lose their characteristics were milk to be incorporated. However, breads of this type represent only a small proportion of commercial bread.

The addition of pure vitamins to bread and flour rather than addition of milk, corn germ, yeast or other natural carriers of vitamins does not affect the baking qualities of flour or the taste of bread. The natural products when added to flour affect both taste and baking qualities, and their compulsory addition, if the product was not acceptable to the purchaser, might wreck a program which depended for success on acceptance by the public.

Certain opponents of the enrichment program, some affiliates of commercial enterprises with interests supposedly in conflict with the program, have circulated misinformation which has gone so far as to suggest that R. R. Williams, who first synthesized thiamine, has been motivated by personal gain in encouraging the enrichment program; also that through his opposition the Food and Nutrition Board of the National Research Council has been dissuaded from considering the greater advantage of enriching flour and bread with corn germ or the like. Nothing could be further from the truth. The program had its beginning in the Council on Foods and Nutrition of the American Medical Association, and Dr. Williams had no part in the deliberations of that Council. The membership of the Food and Nutrition Board is such as to preclude the possibility of any such influence on its judgments, and the royalties for the patents on thiamine synthesis are deeded by Dr. Williams to the Research Corporation to be used exclusively for research.

The enrichment of bread program was aided by a war food order requiring it in January 1943. However, there has been little decline in enrichment of bread since the termination of the order in October 1946. The practice of enriching with vitamins remains popular in both the baking and the milling industries, though less so in some of the smaller local bakeries and mills. What then is the purpose or need of extending enrichment legislation?

The record shows that legislation, especially in the South, was important in extending enrichment to cheaper flours and therefore to the needier low income groups. Enrichment which applied only to the bread of the middle and upper classes would benefit the milling and baking industries but fail to achieve high values in public health. Furthermore, legislation when supported by public opinion provides insurance against neglect of the practice in times of greatest need. The value of compulsory enrichment of bread and flour will be conspicuous in case of a business recession. Under the highly competitive conditions characteristic of such a period, the cost cutting incentive would otherwise lead to serious curtailment at the time when low income people were turning to cereal products as a measure of economy.

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[1] Enrichment legislation has been passed by Alabama, Arkansas, Georgia, Indiana, Kansas, Kentucky, Louisiana, Maine, Mississippi, New Hampshire, New Jersey, New York, North Carolina, North Dakota, Oklahoma, South Carolina, South Dakota, Texas, Washington, West Virginia and Wyoming.

There is an increasing demand for "proof" that enrichment is benefiting public health. Such proof can come only from long term experience and observation of human nutrition. Animal experiments with bread as the principal or sole article of food depart from human practices so far as to invalidate tests. Therefore judgment must be based on the integrated experience of leading students of the intricate field of nutrition. This continues strongly to support the enrichment program.

EXPENDITURES FOR MEDICAL CARE

Recently Frank G. Dickinson, Ph.D., Director of the Bureau of Medical Economic Research of the American Medical Association has made available a twelve-page pamphlet, replete with charts and tables, which presents in detail the calculations and the source of each figure related to the costs of medical care. Since 1940, despite increasing demands for medical care, the proportion of national income spent for medical services has, according to these figures, actually declined. A preview of this study was presented by Dr. Dickinson in the Bureau's exhibit at the Centennial Session of the American Medical Association in Atlantic City. Completion has been made possible by the recent publication of data relative to national income by the U. S. Department of Commerce. The conclusions fall into two categories; what is happening to costs of medical care as a whole, and what is happening to the relative shares of the medical care dollar.

Costs of medical care as a whole tend to move countercyclically; in a depression such costs comprise a larger share of total consumer expenditures and national income than they do in prosperous times. In a period such as the present, the trend is toward more furious inflation and lower relative expenditures for medical care. This is borne out by Dr. Dickinson's figures—medical care took 4.4 per cent of total consumer expenditures in 1932 and 1933, then the share trended downward to 3.9 per cent in 1946. Necessities always loom more important in depression; luxuries, in prosperity. But all evidence indicates that, case for case, medical care costs more each year—particularly where hospital care is concerned. Thus the decline in relative importance of medical care expenditures has occurred in spite of climbing costs of specific treatments and an overall increase in demand for medical services arising from the aging population, the high birth rate and popular education in health, which lessens fear of hospitals.

The declining percentage of income expended on medical care is paralleled by increasing proportions spent on alcoholic beverages, recreation, personal care and jewelry; these items in the budget were selected by Dr. Dickinson not for moral reasons but for comparability in the size of total expenditures.

Physicians will be interested to learn that their share of the medical care dollar has declined from 32 cents in 1929 to 27 cents in 1945. Part of this decline may have been caused by the absence of those physicians who were in the armed forces during 1945. The gap was filled chiefly by increases in the share of the medical care dollar spent for drugs.

FATAL POLIOMYELITIS IN A LABORATORY TECHNICIAN

Accidental infection with poliomyelitis virus contracted in the laboratory has been reported only twice. The first case[1] was that of a woman who had been preparing virus suspension from the tissue of monkeys infected with strains recently isolated from human sources. Recently Wenner and Paul[2] reported the case of a young male technician in the Yale Poliomyelitis Study Unit, who had been trained to assist in the preparation of virus suspensions and centrifugation prior to the inoculation of experimental animals. New Haven had relatively few cases of poliomyelitis during July and August, 1945; this technician had not been out of the city during that period. Two weeks before admission to the hospital his wrist had been deeply scratched by an uninoculated monkey. Virus may have contaminated his hands subsequent to this injury. He was brought to the hospital on Aug. 24, 1945 and died two days later on the ninth day of his disease. Specimens of various tissues were carefully removed at necropsy for virus studies, using the technic of Sabin and Ward.[3] Sterile instruments were used for each different tissue, and all material was kept frozen until tested several weeks later. Poliomyelitis virus was thus detected in the pharyngeal material, in the pons, medulla and spinal cord, axillary lymph nodes on the right side, mesenteric lymph nodes and in the duodenal wall. Virus was not found in the axillary lymph nodes on the left.

This patient had been exposed in the laboratory to strains of virus recently isolated from human beings; that was also the situation in the only other reported case of laboratory infection with poliomyelitis virus.

Wenner and Paul emphasize the danger of exposing technicians to strains of poliomyelitis virus recently isolated from human sources. They believe that manual work with this virus is more dangerous than work with

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1. Sabin, A. B., and Ward, R.: Poliomyelitis in a Laboratory Worker Exposed to the Virus, Science, **94**: 113 (Aug. 1) 1941.
2. Wenner, H. A., and Paul, J. R.: Fatal Infection with Poliomyelitis Virus in a Laboratory Technician. Isolation of Virus from Lymph Nodes, Am. J. M. Sc. **213**: 9 (Jan.) 1947.
3. Sabin, A. B., and Ward R.: Natural History of Human Poliomyelitis; Elimination of Virus, J. Exper. Med. **73**: 771, 1941.

patients ill with poliomyelitis. The case at Yale also suggests the possibility of acquiring poliomyelitis by the cutaneous route. The presence of poliomyelitis virus in the axillary lymph nodes on the right side, as opposed to those on the left, may be significant in view of the deep-scratch which the patient sustained on his right wrist a short time before his fatal illness.

Knowledge of the viruses is still in an early experimental stage. Enough is known to indicate the hazard associated with study of the viruses because of their extraordinary virulence under favorable circumstances.

Current Comment

CHEMICAL CARCINOGENESIS

A remarkable issue of the *British Medical Bulletin* (4:309 [No. 5-6] 1947) is devoted to chemical carcinogenesis. Eighteen papers by different authors from eleven centers review the problems and the results of research supported in part by the British Empire Cancer Campaign over more than twenty years. Many aspects of chemical carcinogenesis, in which the British did much of the pioneer work, are expertly discussed. Each paper is worthy of study. Some physicians should find the papers on skin, bladder, liver and arsenic-induced cancers of special interest. Others will find special appeal in the discussions on carcinogenic substances in human tissues, the role of estrogens in carcinogenesis, carcinogenic action of heated fats and lipids, chemotherapy and other subjects. Despite present accomplishments, more remains to be done, and this line of investigation offers the possibility, at its maximum, of doing much to help solve the causes of cancer.

PYRUVIC ACID AND THE LIVER

The suggestion of the intermediary position of the liver in the lactic acid-carbohydrate cycle was made in 1928.[1] To the well known ability of this organ to form glycogen from sugar, amino acids and fat was thus added the capacity to transform lactic acid to glycogen. The close association of lactic acid to pyruvic acid in the metabolism of carbohydrate suggested studies[2] on the relation of several organs to the transformation of pyruvic acid in the organism. The level of pyruvate was elevated in some of the laboratory animals by restricting the vitamin B_1 in the diet. Simultaneous analyses of blood from the femoral artery and vein and from the hepatic and portal veins were carried out for pyruvic acid, lactic acid and glucose. In both normal and thiamine deficient animals the liver withdraws lactate and pyruvate from the blood and returns glucose to the systemic circulation. The intestine contributes pyruvate to the portal vein irrespective of the adequacy of the thiamine of the diet, and the same situation obtained with reference to the muscle and lactic acid. Thus the liver can transform pyruvate to glucose in much the same way as it does with lactate, an observation in general harmony with current physiologic chemical views of carbohydrate metabolism.

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[1] Cori, Carl F., and Cori, Gerty T.: J. Biol. Chem. **79**:321 (Sept.) 1928. Himwich, H. E.; Koskoff, Y. D., and Nahum, L. H.: Am. J. Physiol. **85**:379, 1928.

[2] Himwich, W. A., and Himwich, H. E.: Am. J. Physiol. **148**:323 (Feb.) 1947.

BOECK'S SARCOID

Boeck[1] originally described sarcoid as a disease that is characterized by multiple nodular lesions of the skin of unknown cause associated with superficial lymph node enlargements. This conception has since been extended to include similar if not identical changes in practically every organ in the body, among them the eye, nose and accessory sinuses, lungs, deep as well as superficial lymph nodes, liver, kidneys, spleen, heart, pituitary, testicle, prostate and bones. Histologically the changes bear a noteworthy resemblance to those of tuberculosis. In many cases the giant cells in the tubercle-like formations of sarcoid contain deposits of calcific material such as are seldom if ever encountered in the giant cells of tuberculosis. However, giant cells are not always present in the histologic lesions of sarcoid and, when present, do not always contain calcific inclusions. Nevertheless, discussion concerning the nature of the disease is focalized almost exclusively on whether sarcoid is or is not a form of tuberculosis. In 1910 Kyrle[2] and Morawetz[3] independently and in 1914 Sweitzer[4] injected emulsified sarcoid tissue into guinea pigs and produced lesions which were histologically indistinguishable from those of tuberculosis. Sometimes the reactions in guinea pigs were prompt; in one animal no reaction was observed until ten months after injection. The validity of these experiments has since been challenged because no precautions were taken to prevent cage infections. In 1941 Longcope[5] reported that "from inoculation of tissue into guinea pigs, rabbits and pigeons we have not obtained any evidence to support the view that the disease is caused by human, bovine or avian tubercle bacilli." In sarcoid it has been shown by various investigators that plasma proteins are increased, especially the globulin fraction. However, Seibert[6] and her co-workers have shown that increase in the globulin fraction occurs also in tuberculosis. The view that Boeck's sarcoid is a form of tuberculosis seems to rest solely on microscopic differences in the giant cells occasioned by the deposit in them of calcified material in sarcoid and its absence in the giant cells of tubercles. Since the results of animal inoculations are unsatisfactory or even contradictory, experiments of this sort should be repeated with due regard for the prevention of cage infections and for delayed reactions in experimental animals.

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[1] Boeck, C.: Multiple Benign Sarkoid of the Skin, J. Cutan. & Gen. Urin. Dis. **17**:543, 1899.

[2] Kyrle, J.: Ueber eigentümliche histologische Bilder bei Hauttuberkulose und deren Beziehung zum benignen Miliarlupoid (Boeck), Arch. f. Dermat. u. Syph. **100**:375, 1910.

[3] Morawetz, G., quoted by Pöhlmann, A.: Zur Frage des sogenannten benignen Miliärlupoid (Boeck-Darier), Arch. f. Dermat. u. Syph. **102**:109, 1910.

[4] Sweitzer, S. E.: Sarcoid of Boeck, J. A. M. A. **63**..991 (Sept. 19) 1914.

[5] Longcope, W. T.: Sarcoidosis, or Besnier-Boeck-Schaumann Disease, J. A. M. A. **117**:1321 (Oct. 18) 1941.

[6] Seibert, Florence B.; Seibert, Mabel V.; Atno, A. Jane, and Campbell, H. W.: Variation in Protein and Polysaccharide Content of Sera in the Chronic Diseases, Tuberculosis, Sarcoidosis and Carcinoma, J. Clin. Investigation **26**:90 (Jan.) 1947.

ORGANIZATION SECTION

Official Notes

THE INTERIM SESSION OF THE AMERICAN MEDICAL ASSOCIATION

After careful investigation of the availability of accommodations for a midwinter (supplemental) session of the American Medical Association in the short time at its disposal, the Board of Trustees selected Cleveland as the place of that session, since the accommodations for meeting places and for sleeping rooms seemed to be adequate and a convenient time seemed to be open. The midwinter session will therefore be held in Cleveland, Jan. 5 to 8, 1948, the first two days being devoted to a session of the House of Delegates and January 7 and 8 to General Scientific Meetings devoted exclusively to the general practitioner.

The Scientific Meetings, the Scientific Exhibit and the Technical Exposition will be housed in the Cleveland Auditorium, but the place of meeting for the House of Delegates has not yet been selected. The Council on Scientific Assembly, in cooperation with the Board of Trustees, will prepare the program for the Scientific Meetings.

Information concerning hotel reservations will be published as soon as arrangements concerning this matter have been completed.

Washington Letter

(From a Special Correspondent)

Sept. 25, 1947.

Varied Comment on Medical Service for Veterans

Despite VFW criticism of the Veterans Administration Medical Service, General Bradley, Veterans Administrator, has been rated by press critics as "the most able and effective appointment Mr. Truman has made." Newspapers which have expressed support of the view of General Dwight D. Eisenhower, Army Chief of Staff, that General Bradley be his successor, contend that he is entitled to the promotion because of his brilliant record as a soldier and as head of the Veterans Administration. Typical comment: "The wrong man as administrator of veterans affairs could easily have shattered America in a few short months. But instead, General Bradley has held the confidence of the veterans, the civilian population and Congress through a period that undoubtedly has been as trying to him as anything that ever happened during the war with Hitler."

James F. O'Neil, new national commander of the American Legion, among other things criticized hospitalization for veterans, but conceded that the provision of hospital beds for veterans had shown signs of progress but was "not satisfactory." The medical service of the Veterans Administration was highly praised by Dr. Charles B. Puestow, clinical professor of surgery, University of Illinois College of Medicine. He said that the finest type of medical care is now available to veterans under the reorganized medical program of the agency, which he said was the result of work by General Bradley, Dr. Paul R. Hawley, medical director, and Dr. Paul B. Magnusson. Dr. Puestow said the reorganization places the care of veterans directly under the supervision of the great United States medical schools, of which fifty-six are operating medical care in sixty-two veterans' hospitals. He also said that patients now get virtually immediate surgical care, where formerly they had to go on waiting lists.

Reports Improvement in Artificial Limbs

Robert S. Allen, chairman, Prosthetics Advisory Committee of the Veterans Administration, told a news conference that three new artificial arms, which are being made available to some 4,500 veterans this week, represent decided improvements in artificial arms. Developed by Northrup Aircraft Company, A. J. Hosmer Corporation and the Navy, distribution of the new arms has been held up since their invention two years ago to permit them to be submitted to extensive tests. Features of the new arms are said to be their light weight, special elbow controls (which can be locked in any position) and increased maneuverability. The limbs were developed with funds supplied by the Veterans Administration and the Army, and contracts for manufacture were let through the Artificial Limbs Committee of the National Research Council.

Deputy Chief Deplores "Assembly-Line Medicine"

Rear Admiral H. L. Pugh, Deputy Surgeon General of the Navy, said at the opening of George Washington University Medical School's academic year that there is an "assembly-line system of medicine" in America today. He said that too little attention is now paid to "the personal patient-physician relationship." He advised students to "look at a sick person as an individual rather than as a case." He deplored the paucity of studies in the humanities by medical students and declared that "the course in medicine is highly technical and produces medical men who are scientists and technicians but not scholars." He charged that the high cost of a medical education "tends to limit the candidates to a certain economic group."

Committee Advocates Training Physicians in Radiation Medicine

The Atomic Energy Commission's advisory committee for biology and medicine has emphasized the urgent need for more physicians with specialized training in the new field of "radiation medicine." The Committee devoted most of its initial session to discussion of personnel needs, which are regarded as serious. Members urged that steps be taken at once to train more young scientists in "atomic biology," the mysterious effect of nuclear radiation on the human body.

Surgical Operations to be Televised at Washington

Surgical operations will be televised from Georgetown University and Doctors hospitals during the eighteenth annual scientific assembly of the District of Columbia Medical Society, October 6, 7 and 8, in Washington, according to Dr. Robert H. Groh, assembly chairman. The telecasts will record operating procedure rather than technical aspects of operations.

Council on Medical Service

SOUTHEASTERN REGIONAL CONFERENCE

The Council on Medical Service is sponsoring a regional conference to be held in the Academy of Medicine Building, 875 West Peachtree Street, N. E., Atlanta, Ga., Oct. 6, 1947. Registration begins promptly at 8:30 Wednesday morning.

Dr. Walter B. Martin, member of the Council on Medical Service, is chairman of the conference; Dr. Steve P. Kenyon, president, Medical Association of Georgia, will welcome those present, and Dr. Harrison H. Shoulders, Past President of the American Medical Association, will talk on "Services the American Medical Association Can Render State Medical Societies."

Rural Health Problems in The South is the keynote. During the conference tribute will be paid to the late Dr. Charles W. Roberts for his long service in medical organizational activities. At the time of his death Dr. Roberts was a member of the Board of Trustees of the American Medical Association and was active in the Medical Association of Georgia.

The Hon. M. E. Thompson, governor of Georgia, will speak. Another topic will be "American Medicine's Rural Health Program," by Dr. F. S. Crockett, chairman, Committee on Rural

Medical Service of the American Medical Association. Dr. Crockett's talk will be discussed by Drs. J. Paul Jones and H. B. Mulholland, members of this committee.

The morning session will be followed by an open forum on "How Shall We Provide Medical Care For All The People?" After the afternoon session the rural health committees of the various states will hold a dinner meeting to discuss, in more detail, the rural health problems.

The eight southeastern state medical societies participating in the conference are those of Alabama, Georgia, Florida, Mississippi, North Carolina, South Carolina, Tennessee and Virginia. All physicians in the area are invited to attend. Dr. Edgar H. Greene, 478 Peachtree Street, N. E., Atlanta, Ga., is chairman of the arrangements committee, and all correspondence should be addressed to him. For room accommodations write to the following hotels: Atlanta Biltmore, Henry Grady, Piedmont, Georgian Terrace, Robert Fulton, Ansley, Atlantan.

Local Committee on Arrangements:

Steve P. Kenyon, M.D., president, Medical Association of Georgia, Dawson.

Edgar H. Greene, M.D., president-elect, Medical Association of Georgia, Atlanta.

Allen H. Bunce, M.D., delegate to the American Medical Association from Georgia, Atlanta.

B. H. Minchew, M.D., general chairman, State Committee on Prepayment Medical Plans for Georgia, Waycross.

Edgar D. Shanks, M.D., secretary-treasurer, Medical Association of Georgia, Atlanta.

O. H. Weaver, M.D., delegate to the American Medical Association from Georgia, Macon.

Spencer A. Kirkland, M.D., chairman, State Committee on Public Policy and Legislation, Atlanta.

SOUTHERN REGIONAL CONFERENCE

The Southern Regional Conference of the Council on Medical Service will be held at the Roosevelt Hotel in New Orleans, October 23-24. Participating with the Council in this conference are the Council on Industrial Health and the Committee on Rural Medical Service of the American Medical Association and the following state medical associations: Alabama, Arkansas, Louisiana, Mississippi, Oklahoma, Tennessee and Texas.

Employing a somewhat different pattern than that used in ast regional conferences, the Council has divided the New rleans meeting into a series of round-table discussions, each directed by a moderator, with all present invited and expected to take part. Dr. James R. McVay, chairman, Council on Medical Service, will be in charge of this conference, which will begin at 9:30 a. m. Thursday. The address of welcome will be given jointly by Drs. Gilbert C. Anderson, president, Louisiana State Medical Society, and H. Ashton Thomas, president, Orleans Parish Medical Society.

Dr. McVay will outline the purpose of the conference and then introduce Dr. George F. Lull, Secretary and General Manager of the American Medical Association, who will talk on "Liaison Between the American Medical Association and the Component Medical Societies."

The round-table discussions start at 10:30 a. m. Thursday. For the first subject, "What Is Good Medical Society Public Relations?" Mr. Henry S. Johnson, director of public relations, Medical Society of Virginia, will act as moderator. During luncheon on Thursday Dr. Joseph S. Lawrence, director, Washington office of the Council on Medical Service, will present "The Washington Legislative Picture." Thursday afternoon will be devoted to a round-table analysis of "Prepayment Medical and Surgical Care Plan Problems." Dr. Charles R. Henry, chairman, Committee on Medical Service and Public Relations, Arkansas Medical Society, will act as moderator.

The round-table discussion Friday morning will be on "Health Problems of the Workers of the South." Dr. Stanley J. Seeger, former chairman, Council on Industrial Health of the American Medical Association, will act as moderator. Panel discussants will include five physicians familiar with the industrial health problems of the Southern states. On Friday afternoon the round-table will be on "Rural Health Problems of the South." Dr. J. Paul Jones, member of the Committee on Rural Medical Service of the American Medical Association, will act as moderator.

Each of the moderators will be assisted by five discussants, who will present fifteen minute talks and make up the various panels. The last hour of each session will be devoted to questions and answers, and all present will be invited to participate. All physicians in the area are welcome and invited to attend.

Mr. Frank Lais, executive director of the Council on Medical Service and Public Relations of the Louisiana State Medical Society, is acting as the secretary for the local committee on arrangements, and all communications should be addressed to him in care of the Louisiana State Medical Society, 1430 Tulane Avenue, New Orleans 13.

Coming Medical Meetings

Conference of State Medical Society Secretaries and Editors, Chicago, A.M.A. Headquarters, Nov. 7-8. Dr. George F. Lull, 535 N. Dearborn St., Chicago 10, Secretary.

American Academy of Neurological Surgery, Colorado Springs, Broadmoor Hotel, Oct. 9-11. Dr. T. C. Erickson, 1300 University Ave., Madison 5, Wis., Secretary.

American Academy of Ophthalmology and Otolaryngology, Chicago, Palmer House, Oct. 12-17. Dr. W. L. Benedict, 102 Second Ave. S.W., Rochester, Minn., Secretary.

American Anti-Arthritis Association, Del Mar, Calif., Oct. 4-5. Dr. Robert T. Pottenger, 65 N. Madison Ave., Pasadena, Calif., Secretary.

American Clinical and Climatological Association, Colorado Springs, Oct 13-15. Dr. James Bordley III, Johns Hopkins Hospital, Baltimore 5, Secretary.

American Public Health Association, Atlantic City, Oct. 6-10. Dr. Reginald M. Atwater, 1790 Broadway, New York 19, Executive Secretary.

American Society for the Study of Arteriosclerosis, Chicago, Hotel Knickerbocker, Nov. 2-3. Dr. O. J. Pollak, Wilmington General Hospital, Wilmington 14, Delaware, Secretary.

American Society of Clinical Pathologists, Chicago, Drake Hotel, Oct. 28-30. Dr. A. S. Giordano, 531 N. Main St., South Bend, Ind., Secretary.

Association of American Medical Colleges, Sun Valley, Idaho, Oct. 27-29. Dr. Fred C. Zapffe, 5 S. Wabash Ave., Chicago, Secretary.

Association of Medical Illustrators, New Orleans, Sept. 29-Oct. 2. Miss Muriel McLatchie, Massachusetts General Hospital, Boston, Secretary.

Association of Military Surgeons of the United States, Boston, Nov. 13-15. Col. James M. Phalen, Army Medical Museum, Washington 25, D. C., Secretary.

Central Neuropsychiatric Association, Galveston, Texas, Oct. 17-18. Dr. William C. Menninger, 3617 W. Sixth Ave., Topeka, Kans., Secretary

Delaware, Medical Society of, Wilmington, Oct. 13-15. Dr. John F. Hynes, Memorial Hospital, Wilmington, Secretary.

District of Columbia, Medical Society of the, Washington, Hotel Statler, Oct. 6-8. Mr. Theodore Wiprud, 1718 M Street N.W., Washington 6, Secretary.

Indiana State Medical Association, French Lick, Oct. 28-30. Mr. Ray E. Smith, 23 E. Ohio St., Indianapolis 4, Executive Secretary.

International College of Surgeons, U. S. Chapter, Chicago, Palmer House Sept. 29-Oct. 2. Dr. Louis J. Gariepy, 16401 Grand River Ave., Detroit 27, Secretary.

Inter-State Postgraduate Medical Association of North America, St. Louis, Public Auditorium, Oct. 14-17. Dr. Tom B. Throckmorton, 406 Sixth Ave., Des Moines, Iowa, Secretary.

Kansas City Southwest Clinical Society, Kansas City, Mo., Municipal Auditorium, Oct. 6-9. Mr. E. Leas Clower, 630 Shukert Bldg., Kansas City 6, Executive Secretary.

Kentucky State Medical Association, Louisville, Sept. 29-Oct 2 Dr P. E. Blackerby, 620 S. Third St. Louisville 2, Secretary.

Michigan State Medical Society, Grand Rapids, Pantlind Hotel, Sept. 23-26. Dr. L. Fernald Foster, 2020 Olds Tower, Lansing 8, Secretary.

Mississippi Valley Medical Society, Burlington, Iowa, Oct. 1-3. Dr Harold Swanberg, 510 Maine St., Quincy, Ill., Secretary.

New England Postgraduate Assembly, Boston, Copley-Plaza Hotel, Oct. 29-31. Dr. Leroy E. Parkins, 8 Fenway, Boston 15, Chairman.

New York State Association of Public Health Laboratories, Albany, Nov. 7. Miss M. B. Kirkbride, New Scotland Ave., Albany 1, Secretary.

Oklahoma City Clinical Society, Oklahoma City, Biltmore Hotel, Oct. 27-30. Dr. Elmer R. Musick, 512 Medical Arts Bldg., Oklahoma City, Director of Clinics.

Omaha Mid-West Clinical Society, Omaha, Oct. 27-31. Dr. John M. Thomas, 1031 Medical Arts Bldg., Omaha 2, Secretary and Director of Clinics.

Southern Psychiatric Association, Birmingham, Ala., Oct. 13-14. Dr. Newdigate M. Owensby, 384 Peachtree St. N.E., Atlanta, Ga., Secretary.

Southwestern Medical Association, Phoenix, Ariz., Hotel Westward Ho, Nov. 6-8. Dr. Louis W. Breck, 116 Mills St., El Paso, Texas, Secretary.

Vermont State Medical Society, Burlington, Hotel Vermont, Oct. 1-3 Dr. Theodore H. Harwood, 128 Merchants Row, Rutland, Secretary.

Virginia, Medical Society of, Roanoke, Oct. 13-15. Miss Agnes V. Edwards, 1200 E. Clay St., Richmond 19, Secretary.

Washington State Medical Association, Seattle, Olympic Hotel, Sept. 28-Oct. 1. Dr. Harold E. Nichols, 327 Cobb Building, Seattle, Secretary.

Wisconsin, State Medical Society of, Milwaukee, Hotel Schroeder, Oct. 6-8. Mr. Charles H. Crownhart, 110 E. Main St., Madison 3, Secretary.

GOVERNMENT SERVICES

ARMY.

MEAT FOR THE ARMED FORCES

The War Department announced September 12 that only 2.2 per cent of the nation's total meat production was procured for the armed forces by the Quartermaster Corps during the first six months of this year. The total meat production for the United States for this period was 11,522 million pounds, of which the Quartermaster Corps procured 254,016,032 pounds. The Quartermaster Corps purchases meat for the Army, Navy, Maritime Commission, Coast Guard and Veterans Administration; procurement includes also requirements for civilian employees of the armed forces in the occupied zones overseas. During this period the Quartermaster Corps procured also 12,891,444 pounds of poultry and 8,152,778 pounds of fish.

PUBLIC HEALTH IN KOREA

The War Department reports that the Korean Medical Society was organized May 10 and that plans were made for organizing sections within the association. More than one hundred scientific papers were submitted at the organization session.

The second phase of the cholera control program was about 90 per cent completed by the end of May. This phase concentrated on the immunization of all persons within the coastal area. The third phase, to cover large inland cities, was initiated May 15. Cholera vaccine dispensed in the four weeks ending May 23 was about double the amount dispensed during the previous four week period.

NURSES MAY APPLY FOR COMMISSION UNTIL SEPTEMBER 30

The Surgeon General, Major Gen. Raymond W. Bliss, announces that applications for regular army commissions in the Army Nurses Corps and Women's Medical Specialist Corps may be submitted up to September 30. Applicants who are unmarried with no dependents under 14 years of age and who have had previous military service are eligible for commissions. The age limit for nurses is 21 to 35 years and for the Women's Medical Specialists Corps from 21 to 45 years. After September 30 the age limit in both Corps will be 21 to 28 years. Pay and benefits for these commissioned officers will be the same as that of all other Army officers. Forms for applying for commissions can be obtained from Army hospitals, district nursing associations, the Surgeon General's Office, War Department, Washington, D. C., and from other Army headquarters.

ARMY AWARDS AND COMMENDATIONS

Colonel Arden Freer

The Legion of Merit has been awarded to Colonel Arden Freer, M. C., U. S. A. (Retired). The citation read as follows: He performed exceptionally meritorious service from December 1941 to October 1942, as Chief of Medical Service, Walter Reed General Hospital; as Director of the Department of Internal Medicine, Army Medical Center, and later as Executive Officer, Walter Reed General Hospital. He ably headed the professional staff while it was responsible for ultimate decision in many complicated professional and administrative problems. He played an important role in the formulation and implementation of teaching measures and text material and in supervision of important training courses incident to the orientation and indoctrination of medical officers who were to serve in responsible professional and administrative positions throughout the world. Colonel Freer who later served in the Surgeon General's Office has also been awarded the Distinguished Service Medal and the Army Commendation Ribbon. Dr. Freer graduated from New York University College of Medicine, New York, in 1913 and entered military service May 18, 1916. He retired from the Army Jan. 1, 1947 and is now executive officer, Office of Assistant Medical Director for Professional Services, Veterans Administration, Washington, D. C.

NAVY

NAVY ADOPTS NEW NOMENCLATURE

To promote the use of standardized titles for diagnoses, the Bureau of Medicine and Surgery of the Navy has adopted the "Standard Nomenclature of Disease," sponsored by the American Medical Association, as the criterion for diagnostic nomenclature terms. The Navy nomenclature is now in process of revision to bring the diagnostic titles into agreement with the standard nomenclature. It is contemplated that the International Statistical Classification of Diseases, Injuries and Causes of Death, which is now being revised by the World Health Organization, will be adopted by the Navy to serve its statistical purposes. These two changes will increase the value of naval medical statistics.

MEDICAL INSPECTION TRIP

Rear Admiral Dan Hunt (MC), general inspector for the Bureau of Medicine and Surgery, left September 9 for the Pacific Coast to inspect the medical facilities in the Eleventh, Twelfth and Thirteenth Naval Districts. En route, Admiral Hunt inspected the hospital at the Naval Training Station, Great Lakes, Ill., and other medical facilities in the Eighth and Ninth Naval Districts.

NAVY AWARDS AND COMMENDATIONS

Commander Eugene P. Harris

The Secretary of the Navy recently awarded the Commendation Ribbon to Commander Eugene P. Harris (MC). The citation reads as follows: "For outstanding service as Safety Officer, Joint Task Force ONE, during operation Crossroads, from Aug. 15 to Oct. 10, 1946. Commander Harris assumed his responsibilities in charge of safety operations, including radiologic safety, during a critical phase of the operation. Working tirelessly and with resourceful initiative, he reorganized the radiologic safety operations, systemized safety technics and accumulated valuable technical information despite the lack of trained personnel and inadequate technical facilities. In addition, he was largely responsible for the safe removal of ammunition from ships radiologically hazardous. By his professional skill and judgment and his determined effort in the face of great difficulty, Commander Harris contributed materially to the success of operation Crossroads. His conduct throughout upheld the highest traditions of the U. S. Naval Service." Dr. Harris graduated from the University of Texas Medical School in 1935 and entered the naval service in June 1937.

VETERANS ADMINISTRATION

A TRIBUTE TO THE MEDICAL PROFESSION

Following an extensive tour of Veterans Administration hospitals, Dr. Paul R. Hawley, Chief Medical Director, outlined his reactions to what he saw of the medical program. Among other things he stated that in the last fiscal year a total of 386,614 veterans were admitted to VA hospitals compared to 271,299 for the previous fiscal year. The Veterans Administration hospital plant had 101,273 available beds compared to 87,369 at the end of the previous fiscal year. A total of 2,744,602 persons were given medical examinations compared with 1,036,634 in the previous year. This number did not include the dental examinations, which numbered 564,171 and 85,537, respectively.

Dr. Hawley attributed the progress made to two principal factors—enough money to do the job and a staff of sufficient size and quality to do it well. With reference to the difficult situation of the recent past Dr. Hawley said: "Until a short time ago, our relatively inadequate medical budget and the insufficient number of personnel made it physically impossible for even our best trained and most competent doctors to provide the kind of medical care they were capable of giving and eager to give to the veteran patient. Professional stimulation through close association with the finest medical schools, the challenge of research, and opportunities for professional growth and advancement were only dreams in those difficult days. But despite the overcrowded hospitals, staggering patient loads and inadequate equipment and personnel, many of our doctors struggled to the limit of their endurance to provide the best medical care possible under the circumstances. That they were able to accomplish as much as they did is a tribute to their sense of obligation to their calling and their concern for their patients' welfare.

"In contrast to the conditions I have described, funds are now available to assure us not only that medical services will not be seriously curtailed, but—more important—that the quality of medical care will not be jeopardized. But this assurance is ours only if these funds are widely used so that every dollar spent contributes directly to the attainment of our major goals.

"While the progress we have made would have been quite impossible without the necessary funds, it would have been equally impossible without the necessary personnel. Thanks to the interest of the medical profession as a whole in the VA medical program, we have been able to secure the services, on a full-time, part-time or consultant basis, of the country's most gifted professional men. Our entire staff—both those who have seen long service with the VA and those who joined us more recently—has responded magnificently to the professional stimulation and guidance these leaders have provided.

"In any medical program, it is the individual doctor, dentist, nurse and attendant who is finally responsible for the quality of medical care. Without their unstinting support and personal competence, the most ambitious and well planned medical program is inevitably doomed to failure. Inspired by unparalleled opportunities for practicing the finest medicine, both our older and our newer men, sharing their knowledge, skill and enthusiasm, have contributed equally to the creation of a well balanced medical staff which is bringing to the veteran's bedside the very best in medical theory and practice."

RELEASE FROM HOSPITAL PAPER WORK

The chief medical director of the Veterans Administration, Dr. Paul R. Hawley, has directed that registrars' offices be set up in Veterans Administration hospitals to handle the routine paper work that nonprofessional personnel can process, in order to relieve physicians, nurses and technicians so they may have more time for the care of veteran patients. The registrar's office will handle the paper work in connection with admission, transfer and dismissal of patients; maintain clinical forms and reports; develop statistical data; direct administrative ward procedures; supervise all ward clinical and stenographic personnel, and take care of patients' clothing and valuables.

PERSONAL

Dr. William F. English has resigned from the staff of the Veterans Administration Hospital in Grand Rapids and will return to private practice in Saginaw, Mich.; he will be succeeded on the hospital staff by Dr. William H. Davis Jr., a native of North Carolina, a graduate of Indiana University School of Medicine and a veteran of World War II.

Dr. Clement C. Troensegaard, formerly of Pasadena, has been appointed chief of physical medicine at the Birmingham Veterans Administration Hospital, Van Nuys, Calif., where he has been on duty as chief of the patients receiving division since April. Dr. Troensegaard served in the Pacific in the Navy during the recent war.

PUBLIC HEALTH SERVICE

CONFERENCE ON NOMENCLATURE OF THE Rh FACTORS

The Surgeon General, U. S. Public Health Service, has appointed an advisory board to designate the proper names for the several anti-Rh blood typing serums licensed under the Biologics Law. The desire is to have recommended a system of nomenclature which will be adequate to cover this phase of human genetics and one which can be readily adapted to clinical use, medical teaching and laboratory diagnosis.

The members of the board are Drs. William B. Castle Jr., professor of medicine, Harvard Medical School; Maxwell M. Wintrobe, professor of medicine, University of Utah School of Medicine, and Laurence H. Snyder, professor of medical genetics, University of Oklahoma School of Medicine.

The conference will convene at 9:30 a. m. October 20 in the Hotel Statler, Washington, D. C., and will continue on October 21.

The board will be pleased to hear evidence from persons qualified in this field. Those having evidence to present should communicate in advance with Dr. M. V. Veldee, Chief, Biologics Control Laboratory, National Institute of Health, Bethesda 14, Md. Others desiring to attend will be welcome, but advance notice of interest will be appreciated so that meeting accommodations may be assured. Copies of the speakers' remarks, if extensive, are desired by the board.

NATIONAL ADVISORY SEROLOGY COUNCIL

The name of the Committee on the Evaluation of Serodiagnostic Tests for Syphilis has been changed to the National Advisory Serology Council, and its scope has been enlarged. These recommendations were made by the committee last May and have been approved by the Surgeon General of the U. S. Public Health Service. At the last meeting of the committee the chairman, Dr. J. F. Mahoney, Director of the U. S. Public Health Service Venereal Disease Research Laboratory on Staten Island, N. Y., discussed the new cardiolipin-lecithin antigen which, because of the greater specificity of tests results, appears to be replacing the older antigens.

PERSONAL

Dr. Joseph S. Spoto has been assigned as assistant chief of the Venereal Division, U. S. Public Health Service, Washington, D. C. Dr. Spoto, formerly of Tampa, Fla., joined the Public Health Service in 1941. He was transferred to Mexico City in 1944 to assist the Mexican government in organizing a venereal disease training center; more recently he was chief of the venereal disease control activities in the Caribbean area with headquarters in Guatemala City. He is a graduate of the Tulane University School of Medicine, New Orleans.

PHYSICIANS SEPARATED FROM SERVICE

ARMY MEDICAL CORPS OFFICERS RECOMMENDED FOR/OR RELIEVED FROM ACTIVE DUTY

Alabama

Eckhous, Arthur W	York
Eppes, John K	Eufaula
Harris, Edward C. Jr	Birmingham
Jackson, Albert F. Jr	Eutaw
Miller, Donald A	Birmingham
Phifer, Robert L	Tuscaloosa
Wilson, Willie E	Russellville

Arizona

Ballantyne, Alando J	Tucson
Davis, Robert L	Phoenix
Hughes, Thomas J. Jr	Tempe
Sickler, James R	Tucson

Arkansas

Brooke, Hugh C	Conway
Faris, John C	Jonesboro
Kolb, William P	Little Rock
Lucy, Robert E	Little Rock
Porter, James O. Jr	Mulberry
Sims, Henry M	Little Rock

California

Brundage, Birchard M	San Jose
Dobyns, Gypsie J	San Francisco
Flyer, Harry	Los Angeles
Gillespie, James D. Jr	Los Angeles
Husband, Richard D	Modesto
Kelley, Walter W	Azusa
Marasse, Henry F	San Francisco
Nash, Kenneth P	Glendale
Robertson, Murl J	Santa Monica
Sheafe, Earle V	Oakland
Van Vranken, Ralph	Los Angeles
Woodhull, Franklin E	Los Angeles

Colorado

Curry, Vernell W	Brush
Huelsmann, Donald	Colo. Springs
Levisohn, Leonard W	Denver
Lundgren, John C	Julesburg
McIlroy, Richard H	Pueblo
Maul, Robert M	Denver
Roberts, Claude O	Denver
Tepley, Fred H	Boulder
Tramblie, William G	Longmont

Connecticut

Case, Edward P	West Hartford
Conway, Edward J	Hartford
Leonard, George A	Waterbury
McPherson, Sidney R	West Hartford
Preston, Thomas R	West Hartford
Rup, Edmund C	Hartford
Shapiro, Louis M	New Haven
Waldorf, Frank B	Westport

Delaware

McDaniel, Joseph S. Jr	Dover
Shands, Alfred R. Jr	Wilmington
Smith, Alexander	Wilmington

District of Columbia

Brandt, Frederick B	Washington
Gager, Leslie T	Washington
Gilman, Leonard	Washington
Kirstein, Stanley W	Washington
McMahon, John M	Washington
Richards, Guy A	Washington

Florida

Ellingson, Eugene A	Key West
Holden, Milo H	Plant City
Holland, Francis T	Tallahassee
McCullagh, William H	Jacksonville
Skilling, Francis C	Miami
White, Millard B	Sarasota

Georgia

Austin, Jack L	Griffin
Bickers, Donald S	Brookhaven
Bradley, Paul L	Dalton

Georgia—Continued

Hill, William H	Palmetto
Holliman, Henry D. Jr	Atlanta
Hulsey, John M. Jr	Gainsville
Johnson, Herbert L	Thomasville
Martin, John M	Augusta
Montgomery, Robert C	Butler

Idaho

Hanford, Kenneth K	Boise
Henson, Rex T	Coeur d'Alene
McQueen, Max B	Lewiston
Simpson, Samuel D	Caldwell

Illinois

Clark, Dwight E	Chicago
Cluxton, Harley E. Jr	Jacksonville
Freis, Edward D	Chicago
Gianasi, Charles A	Kincaid
Horner, Harry T	Chicago
Jordan, David M	Oak Park
Lardizabal, Francisco J	Chicago
Mizell, Irving D	Chicago
Neff, Lionel H	Dwight
Plotke, Frederick	Chicago
Woltmann, George R	Chicago
Zaikis, John P. Jr	Chicago

Indiana

Farris, John J	Washington
Henderson, Lowell L	Kokomo
Houston, Frederick D.	Indianapolis
Huff, Rex L	Wyatt
Lebioda, Henry	Gary
McCartney, Donald H	Indianapolis
Salm, Andrew	Indianapolis

Iowa

Cogan, Samuel	Mt. Pleasant
Dorner, Ralph A	Iowa City
Krouse, Howard	Des Moines
McCuistion, Harry M	Sioux City
Tuynman, Peter E	Rock Valley
West, Norman D	Avoca

Kansas

Browning, William H	Kansas City
Exon, Charles S	Wichita
Hill, John J	Pleasanton
Kaiser, Max E	Ottawa
Martin, Frank J	Garden Plains
Neifert, Noel L	Glen Elder
Spearing, Joseph H	Columbus

Kentucky

Arnn, Edward T	Louisville
Ellis, Stephen R	Danville
Kruse, Charles A	Louisville
Valentine, William N	Hopkinsville

Louisiana

Armistead, Charles W	Shreveport
Boustany, Michael E	Lafayette
Hart, Noah L	New Orleans
Henrickson, John W	New Orleans
Myers, Magnus J	Shreveport
Peek, Gordon W	Oxford
Owen, Whyte G. III	Baton Rouge
Ramsey, George A	Farmerville
Wheeler, Charles J	New Orleans

Maine

Bridges, Donald E	Bangor
Shapero, Benjamin L	Bangor

Maryland

Brady, Frank J	Baltimore
Checket, Pierson M	Baltimore
Culler, John M	Baltimore
Houck, Harold E	Galena
Taborsky, Charles R	Baltimore
Vanni, Frank L	Baltimore

Massachusetts

Alpert, Lavid R	Boston
Bell, Horace S	Worcester
Bragg, Ernest A. Jr	Boston
Duffy, Wallace H	Lexington
Erickson, Gustaf W. Jr	Springfield
Goldsberry, John J	Worcester
McNally, Francis J	Palmer
Naujokaitis, Jonas S	Worcester
O'Neill, John J	Salem
Pavio, Irving L	Malden
Sexton, Lloyd I	West Newton
Trent, Sumner E	Mattapan
Udis, Sanford W	Fall River

Michigan

Berlin, Allen	Detroit
Bramer, Clifford F. Jr	Detroit
Hill, Jack W	Iron River
Holm, Arvid G	Three Rivers
McIntyre, William B	Detroit
McNeal, Don Jr	Grand Rapids
Sethney, Walter F	Menominee
Weiss, Jack I	Detroit
Zbikowski, Joseph	Detroit

Minnesota

Brickley, Paul M	Two Harbors
Christoferson, Lee A	Minneapolis
Friedell, Hymer L	St. Paul
Hays, Albert T	Minneapolis
Kusske, Bradley W	New Ulm
Lysne, Myron	Minneapolis
Sather, Edgar L	Fosston
Sengpiel, Gene W	Rochester
Vaughn, Louis D	Rochester

Mississippi

Brown, John E. Jr	Blue Mountain
Davis, James S	Biloxi
Hand, Albert M	Cleveland

Missouri

Asel, Norman D	St. Louis
Bondurant, Bryce H	Kirksville
Brumback, Clarence L	Joplin
Eisenstein, Albert B	Doniphan
Fletcher, Kenneth E	St. Louis
Forman, George W	St. Joseph
Hollweg, Kenneth C	Kansas City
Howe, Louis F	Union
Humberd, Charles D	Barnard
Hunter, Martin P	Moberly
Hurst, Thomas C	Kansas City
Lippert, Stuart P	St. Louis
McGee, William J	El Dorado Springs
Paletta, Francis X	Kirkwood
Quisito, Joseph M	Kansas City
Smith, Arthur B	Kansas City
Sweetman, Homer A	St. Louis
Tripodi, Antonio	St. Louis
Weyerich, Leon F	Rolla

Nebraska

Barr, Robert E	Tilden
Drozda, Joseph P	Omaha
Kemp, William T	Omaha
Swartwood, Francis M	Adams

New Hampshire

Fletcher, Frank L	Milford

New Jersey

Anderson, Robin G	Passaic
Boozan, Charles W	Elizabeth
Foley, James F	East Orange
Garzieri, Anthony R	Totowa Borough
Lowenthal, Joseph J	Atlantic City
McGahn, Joseph L	Atlantic City
Pierce, Michael A	Kearney
Shack, Maxwell H	Newark
Toth, Elmer F	Jersey City
White, Richard E	Wyckoff

PHYSICIANS SEPARATED FROM SERVICE

New York

Alisberg, Norman............New York
Atchley, John A.........New York City
Brown, Edward E.............Elmhurst
Buckley, Richard J.............Buffalo
Curran, George L........New York City
Delnunzio, Richard F..........Brooklyn
Ferrante, Frank M...........New York
Fields, Albert................Jamestown
Geiger, Carl J. Jr..............Syracuse
Goldie, Robert F.................Albany
Hipsley, Roland W...........New York
Hofstetter, Alexander M...Poughkeepsie
Joost, Arthur M. Jr.......Southold, L. I.
Karron, Irwin G.................Bronx
Lewis, Revis C.................Mooers
Lustig, Julian....................Bronx
McConnell, Joseph J............Elmira
McKaig, Alan M................Jordan
Meigs, John W..............New York
Naccash, Edmund P...........Lawrence
Posner, Marvin.....................Troy
Price, Frederick J. Jr...........Syracuse
Rupsis, Joseph M............Amsterdam
Scanlan, John B..............New York
Sharp, Lewis I. Jr......New York City
Trott, Harold W...............Hemlock
Wagner, Laverne G.............Buffalo
Wood, Edward C..........White Plains
Young, Charles A. Jr.........New York

North Carolina

Chastain, Loren L.......Winston-Salem
Costner, Alfred N............Lincolnton
Davy, Lloyd F..............Fayetteville
Gruenwald, Charles...............Oteen
Hayman, Louis D. Jr..........Whiteville
Mebane, John G................Spindale
Stegall, John T..............Marshville
Thiele, Walther H...........Fayetteville

North Dakota

Brandenburg, Robert O.........Bismarck
Dietz, Chester R..............Cogswell
Hinz, Walter E.............Lidgerwood
Lund, Herman C............San Haven

Ohio

Anderson, Donald W............Canton
Arnold, Drew J..............Columbus
Bauman, Edward E.............Cleveland
Brudzynski, Carl N........Garfield Hts.
Cestone, Patrick B..........Youngstown
Doermann, Edward L........Cincinnati
Dworken, Harvey J.........Rocky River
Effler, Donald B....................Toledo
Hruby, Ferdinand J. H.....Chagrin Falls
Isley, Homer E.................Wauseon
Leffler, William B..................Marion
Pasterak, George E...........Cleveland
Pennington, Porter C...........Findlay
Robinson, John M..............Bellaire
Stoughton, Wilbur A..........Columbus
West, William J.............Chillicothe

Oklahoma

Beller, Cleve.......................Stigler
Bohan, Kenneth E..............Medford
Cohen, Samuel L........Oklahoma City
Cullen, Marvin L........Oklahoma City
Royse, Paul H...................Elk City
Shwen, Ralph O..................Apache
Smith, Raymond O.............Hominy
Strader, Simon E........Oklahoma City

Oregon

Collier, Emerson J............Clatskania
Epler, Robert H....................Salem
Gary, John E..................West Linn
Grier, Dugald H. Jr.........Multnomah
Harris, Norman M............Portland
Henton, George H.............Portland
Jones, Russell S.................Medford
McKeown, Scott B...........Marshfield
Wolski, Joseph B. Jr............Portland
Woods, Harvey A................Ashland

Pennsylvania

Allen, Thomas E.............Pittsburgh
Apt, Leonard...............Philadelphia
Ball, Edgar S.................Braddock
Conly, Samuel S. Jr..........Bryn Mawr
Conston, Alfred S.............Philadelphia
Eger, Saul D.................Ambridge
Forster, Robert E. II........St. Davids
Gilmore, Frederick R.......Bloomsburg
Hanisek, William F............Hazelton
Irey, Philip M. Jr...............Lebanon
Jaedecke, Robert G............Aliquippa
Kinsey, Frank R.................Ligonier
Klein, Robert..................Wilkes Barre
Linhart, William O. Jr.........Jeannette
Lorenz, Howard............Philadelphia
McLane, Charles F........Williamsport
McLaughlin, Edward F.....Philadelphia
Minteer, Donald W..............Butler
Morris, Harold H. Jr..........Villanova
Rothermel, William S..........Ashland
Rush, Calvin C................Johnstown
Stewart, Ashton T...........Philadelphia
Warren, John W. Jr..........Philadelphia
Woodhouse, Walter W......Pittsburgh
Zerbe, Grover F............Valley View

Rhode Island

Andrews, Carl E.............Providence
Bragg, Volney C.............Providence
Foster, Edward..............Pawtucket
McDuff, Henry C............Pawtucket
Metcalf, Paul B. Jr..........Providence

South Carolina

Brockman, Hiram L..........Charleston
Carrigan, Ernest W. Jr......Society Hill
Creed, George O................Camden
Fearing, John M...........Charleston
Finney, Claude S............Spartanburg
Herbert, Henry W..............Florence
Kilgore, Samuel R.............Woodruff
Shaw, James G..................Columbia
Smith, Albert C. Jr.......Glenn Springs
Stanfield, Thomas F.........Orangeburg
Wilkes, Samuel M...............Laurens
Wilson, Harry F..............Columbia

South Dakota

Baughman, Richard C...........Madison
Hopson, George.................Rosebud
Larson, Darell H...........Mt. Vernon

Tennessee

Austin, Andrew C.............Nashville
Beach, William C.............Nashville
Cocke, Edwin W. Jr...........Memphis
Crouch, Henry W.......Mountain Home
Graves, Oliver H.................Jackson
Henderson, Raymond D........Nashville
Houston, John L.................Memphis
Larkin, John C. Jr..............Memphis
Lawson, John F...................Erwin
McKay, Clinton H. Jr........Memphis
Mickler, Robert H.............Memphis
Money, Roy W..............Winchester

Texas

Barlett, Henry L................Houston
Gibson, John P..................Abilene
Lupo, Thomas G..................Waco
McCollum, Granville G..........Mason
Pearson, Huston.............Spearman
Stool, Joseph A...................Del Rio
Thomas, James D................Denton
Womack, Jack I..................Dallas

Utah

Ballard, Robert H.................Draper
Christenson, Clarence J...Salt Lake City
Cowley, R. A......................Layton
Hampton, Robert R........Salt Lake City
Krantz, Leland K.........Salt Lake City
Smernoff, Meyer......Bingham Canyon
Westwood, James B..................Provo
Whitmore, John D............Roosevelt

Vermont

Agan, Lawrence M...........Bennington

Virginia

Beverage, John H.............Montere
Ellett, Rufus P. Jr............Roanol
Elliott, Grant R...............Richmor
Emlaw, Maynard R............Richmor
Ford, Joseph A. Jr...........Lynchbur
Gearing, Frank W. Jr........Woodstoc
James, Charles F. Jr.........Appomatto
McCoy, Hulburt C..........Gordonsvil
Migliore, Anthony D...........Phoebi
Ratliff, John M................Richlan
Re Mine, William H. Jr......Richmor
Singleton, Elbert B............Richmor
Thrasher, Robert H.............Norfo
Wohlford, Reuben F...........Roanol
Zfass, Isadore S...............Richmor

Washington

Cooper, Albert L.................Seatt
Ebert, Joseph W. Jr............Evere
McCallum, Gene T.............Spokai
Smith, Alistair M. Jr........Bellingha
Wetzel, James W................Seatt

West Virginia

Austerman, Warrington......Huntingtc
Cale, Ellsworth F............Charlestc
Campbell, Wayne C..............Chest
Davis, Del Roy R.............Kingwoc
Dennison, Robert R..........Huntingto
Dodrill, R. Moore Jr............Welc
Fleming, Robert J..........Morgantow
McNeer, Buford W..............Hinto
Mills, Woodrow W..............Kenov
Townsend, Milford F...........Philipj
Whitaker, Theodore R.........Weirto

Wisconsin

Beutler, Theodore V............LaCros
Brah, William A..............Milwauk
Carnesale, Peter L............Milwauke
Colgan, John J................Milwauke
Grether, Eugene R............Milwauk
Lorenz, Thomas H..............Madisc
Martin, George J............Green Ba
Marshall, James W...........Milwauk
McCormack, Robert M......Sheboyg
McCullough, J. C....North Fond du L
Mulvaney, John J.................Maric
Netzow, Earl J................Milwauk
Rasmussen, Aaron F. Jr........Madisc
Scheible, Frank J...................Racir
Schutz, Weston J................Shawan
Smith, Max M......................Racir
Stiennon, Oscar A. Jr.........Green Ba
Zintek, Sylvester S...........Milwauke

Canal Zone

Aycock, Samuel D..............Cristoba
Saltzman, Benjamin N...Ancon, Panam
Smith, Elmer R...................Ancoi
Stevenson, Gilbert M..............Ancoi

Puerto Rico

Acosta, Andres A.....Altos Rio Piedra
de Andino, Agustin M. Jr......Santurc
Rodriguez-Molina, Rafael......Bayamo
Sala, Luis F........................Ponce

Philippine Islands

Waterous, Willard H...San Juan Manila

CORRECTION

Tomlinson, William A.—The Surgeon General's Office reports that the name of William A. Tomlinson, Springfield, Ill., was erroneously included in the list of officers recommended for relief from active duty in The Journal, July 26, 1947, p. 1104. This officer is still on active duty.

Medical News

(Physicians will confer a favor by sending for this department items of news of general interest: such as relate to society activities, new hospitals, education and public health. Programs should be received at least two weeks before the date of meeting.)

ARKANSAS

Fifth District Medical Society Meeting.—This society will meet October 30 in Camden. At the dinner following the reception short talks will be made by officers of the Arkansas Medical Society: Drs. Lorenzo T. Evans, president; William R. Brooksher, secretary, and Euclid M. Smith, chairman of the council. Dr. Morris Fishbein, Chicago, Editor of THE JOURNAL, will speak at the public relations meeting at the Camden Municipal Auditorium, 7:30 p. m. Gov. Ben Laney will also appear on the program along with Sen. James W. Fulbright, Fayetteville, and Congressman Oren Harris, Belton. All members of the Arkansas Medical Society are invited to attend and are requested to make reservations for the dinner with Dr. Rufus B. Robins, Camden.

CALIFORNIA

Gift to Library.—The library of the College of Medical Evangelists, Loma Linda-Los Angeles, has received the gift of many textbooks and bound files of medical journals from the library of Dr. Lloyd E. Smith, an alumnus. Dr. Smith, who practiced in San Bernardino and was a frequent visitor at the college, died May 1.

Memorial Lecture in London.—Dr. John H. Lawrence, assistant professor of medical physics, University of California Medical School, Berkeley-San Francisco, delivered the Mackenzie-Davidson Memorial lecture of the Institute of London on July 17 at the invitation of the British Institute of Radiology. He received the institute's annual award.

Medical Apprenticeships.—Three medical students of the University of California Medical School, Berkeley-San Francisco, have completed summer apprenticeships under the guidance of practicing California physicians, in accordance with a plan initiated by Dr. William J. Kerr, professor of medicine. Dr. Kerr said that the purpose of the plan is to give medical students an opportunity to learn first hand the practical operation of private medical practice. The three students had completed the third year in the medical school.

CONNECTICUT

Chairman of Tuberculosis Commission.—Dr. Joseph I. Linde, health officer for the City of New Haven and clinical professor of pediatrics and public health, Yale University School of Medicine, New Haven, was recently appointed chairman of the Connecticut State Tuberculosis Commission, of which he has been a member since 1939. Dr. Linde is also a member of the Building Program Committee for the State's Humane and Welfare Institutions, created at the last session of the general assembly.

Dr. Chaffee Honored.—The trustees of the Sharon Hospital, Sharon, voted unanimously to name the original building of the hospital "The Chaffee Pavilion" and to place a plaque at the main entrance expressing appreciation of Dr. Jerome S. Chaffee's long and untiring service in managing the hospital. The board believes that this action not only expresses the sentiment of the trustees but also of members of the communities which have benefited from the service which this hospital has rendered during the past thirty-eight years.

DISTRICT OF COLUMBIA

Chest Physicians Meet.—The fourth biannual meeting of the Potomac Chapter of the American College of Chest Physicians will be held in the District of Columbia Medical Society Building, October 5, at 1 p. m. On the scientific program speakers will be Dr. Herbert C. Maier, New York, "Recent Trends in the Surgical Therapy of Pulmonary Tuberculosis"; Dr. Osler A. Abbott, Atlanta, Ga., "Etiology of Hemoptysis Associated with a Negative Plain Chest X-Ray"; Dr. Arthur M. Olsen, Rochester, Minn., "Role of Inhalation Therapy in Management of Bronchiectasis"; Dr. David Salkin, Hopemont, W. Va., "Postmortem Pneumothorax," and Dr. Peter A. Herbut, Philadelphia, "The Cytology of Bronchial Secretions in Carcinoma of the Lung." A short business meeting at 5:15 p. m. and a dinner at the Mayflower Hotel at 6:30 p. m. will follow. At 8 o'clock an X-Ray Conference will be held.

The Eighteenth Annual Meeting.—The eighteenth annual meeting of the Medical Society of the District of Columbia will be held at the Hotel Statler October 6-8 under the presidency of Dr. William P. Herbst Jr. Guest speakers on the program include:

Herbert W. Schmidt, Rochester, Minn., Recognition and Management of Esophageal Disease.
John H. Garlock, New York, Present Trends in Gastric Surgery.
Henry L. Bockus, Philadelphia, Role of the Pancreas in Gastrointestinal Disorders.
Geza de Takats, Chicago, Surgery of Hypertension.
John T. King, Baltimore, Pseudoangina.
Walter Kempner, Durham, N. C., Medical Management of Hypertension—Rice Diet.
Richard W. Te Linde, Baltimore, Diagnosis and Treatment of Carcinoma of the Uterus.
John Caffey, New York, Status Lymphaticus.
Douglas N. Buchanan, Chicago, Subdural Hematomas of Newborn.
Elvin M. Jellinek, Sc.D., New Haven, Conn., Newer Approaches in the Care of the Alcoholic.

On Monday afternoon at 3:15 there will be a panel discussion on "Upper Extremity Pain" with William E. Nachlas, Baltimore; M. Barnes Woodhall, Durham, N. C., and Gerald H. Pratt, New York, participating. Tuesday afternoon a panel discussion on "Hyperfunctioning Endocrine Tumors" will include Joseph C. Aub, Boston, and Meyer M. Melicow, New York. Wednesday afternoon's panel will be on "Antibiotics—Experimental Trends." Monday's luncheon speaker will be Louis A. M. Krause, Baltimore, "Trends in Medicine"; Wednesday's speaker, George F. Lull, Secretary and General Manager, American Medical Association, Chicago, "Activities of the Headquarters of the American Medical Association." At the annual dinner Wednesday at 7:30 p. m. Edward L. Bortz, Philadelphia, President of the American Medical Association, will speak on "Medical Statesmanship." A public meeting will be held Tuesday evening at 8:15 at which Dr. George E. Gardner, Boston, will speak. There will be exhibits, demonstrations and motion pictures. Medical officers in the Army, Navy and Public Health Service and physicians employed by the Veterans Administration are invited to be guests of the society and will not be required to pay a registration fee.

ILLINOIS

Two Down State Postgraduate Conferences.—The first of a series of twelve postgraduate conferences, sponsored by the Postgraduate Education Committee of the Illinois State Medical Society and authorized by the Council, has been arranged for the Ninth Councilor District, October 2, at the Elks Hall, Marion, beginning at noon and extending through the evening. The district includes the counties of Edwards, Franklin, Gallatin, Hamilton, Hardin, Jefferson, Johnson, Massac, Pope, Saline, Wabash, Wayne and Williamson. The second conference will be held for the Sixth Councilor District at the Dunlap Hotel in Jacksonville, October 9 from 12:30 p. m. extending through the evening. The district includes the counties of Adams, Brown, Cass, Pike, Scott, Calhoun, Greene, Jersey, Madison, Macoupin and Morgan. The lecturers for both conferences are mostly from Chicago.

Chicago

The Belfield Lecture.—At the meeting of the Chicago Urological Society, October 16, at the Palmer House, the nineteenth annual William T. Belfield Memorial Lecture will be given by Dr. Hans Selye, McGill University, Montreal. He will be the first foreign speaker in the Belfield lecture series.

Ex-Cook County Hospital Interns' Reunion.—Reunion for all alumni interns of Cook County Hospital will be held November 7 at Cook County Hospital in celebration of the hundredth anniversary in founding of a charity hospital for Cook County in 1847. Dedication of the Tice Memorial Library will be held at 4:30 p. m. and a reunion banquet at the Congress Hotel at 6:30. For information address William J. Baker, M.D., secretary-treasurer, Cook County Hospital Internes' Alumni Association, 7 West Madison Street, Chicago 2.

Chemists Honor Dr. Volwiler.—The Honor Scroll of the American Institute of Chemists will be presented to Ernest H. Volwiler, Ph.D., executive vice president, Abbott Laboratories, October 10 at a dinner of the Chicago chapter in the Furniture Club at 7 p. m. The scroll is being given for Dr. Volwiler's contributions to the field of medicinal chemistry, for his work in the organization of research programs and his active part in furthering the work of scientific societies. Dr. Robert E.

Wilson, Mount Vernon, Ind., and Albert E. Sidwell Jr., Ph.D., director of chemical laboratories of the American Medical Association, will speak at the dinner. Reservations may be made with Mary Alexander, Universal Oil Products Company, 310 South Michigan Avenue.

Graduate Course in Gastroenterology.—The Chicago Medical Society has announced its second postgraduate course October 27-November 1, focusing attention on gastroenterology. It is designed for both the specialist and the general practitioner. All sessions will be held at Thorne Hall. Registration will be limited to one hundred. The out of state faculty includes:

Russell S. Boles, Philadelphia, Modern Conception of Cirrhosis of Liver.
Fr[illegible], Minn., Circulation of the Liver and Its [illegible].
As[illegible], [illegible] York, Vagotomy.
Sara M. Jordan, Boston, Functional Digestive Diseases.
George B Eusterman, Rochester, Minn., Late Sequelae of Gastric Surgery, Problems in Diagnosis and Treatment.
Richard B. Cattell, Boston, Management of Carcinoma of the Bowel.
John H. Fitzgibbon, Portland, Ore., Diagnosis of Lesions Near the Cardia.
Walter C. Alvarez, Rochester, Minn., What Is the Matter with Patients Always Tired?
Frank H. Lahey, Boston, Surgical Treatment of Peptic Ulcer.

This course, like the one in cardiovascular diseases October 20-25, has been approved for veterans' training. For details of veteran registration see THE JOURNAL, September 20, page 169. The fee is $50.

INDIANA

The Ninety-Eighth Annual State Meeting.—The ninety-eighth annual session of the Indiana State Medical Association will be held at French Lick, October 28-30, under the presidency of Dr. Floyd T. Romberger, LaFayette. The scientific program will open Wednesday morning with the president's address. On the afternoon program Dr. Henry N. Harkins, Seattle, among others, will participate in a symposium on "The Treatment of Burns." Section meetings on medicine, surgery, ophthalmology and otolaryngology, anesthesia and general practice are scheduled for the afternoon. Guest speakers on the general scientific sessions resuming Thursday morning include:

William S. Middleton, Madison, Advances in Therapy of Coronary Disease.
Alexander R. MacLean, Rochester, Minn., The Paradox: Psychoneurotic Malingering.
George T. Pack, New York, Cancer of the Breast; Its Early Diagnosis and Treatment.
Philip Lewin, Chicago, Treatment of Poliomyelitis in the Early Stages.
Lee Foshay, Cincinnati, Use of Streptomycin in the Treatment of Tularemia.
Bruce K. Wiseman, Columbus, Ohio, Modern Treatment of the Anemias.

At the annual banquet Thursday evening Dr. Roscoe L. Sensenich, South Bend, President-Elect of the American Medical Association, will speak. Other meetings during the session will be the Indiana Health Officers' Conference, state and county Conservation of Vision committees, state and county Anti-Tuberculosis committees, the Indiana chapter of the American College of Chest Physicians and the Indiana Roentgen Society. The Woman's Auxiliary will meet October 28-30 at the hotel.

MASSACHUSETTS

Dr. Howe Joins Smithwick Foundation.—Dr. Chester W. Howe, Framingham, has resigned from the active staff of the Framingham Union Hospital to accept an appointment at the Smithwick Foundation, where he will conduct research on wound infections. He will have available the facilities of the Massachusetts Memorial hospitals, as well as those of the Smithwick Foundation and Boston University School of Medicine, all of Boston, through which funds will be made available. Before going to Framingham Dr. Howe was an instructor in surgery at Boston University School of Medicine. He had also held appointments at the Rhode Island, Providence Lying-In and Pondville hospitals.

Dr. Lindemann Heads Department of Social Relations.—Dr. Erich Lindemann, associate professor of psychiatry, Harvard Medical School, Boston, has joined the Harvard University Faculty of Arts and Sciences to broaden the scope of the new department of social relations established last year. The department was formed to break down the limitations of individual departments in working on common problems of social relations. Dr. Lindemann is a graduate of Cologne University, Germany, 1924, and came to Harvard Medical School in 1935 as a Rockefeller fellow in neurology and psychiatry. He was an instructor in psychiatry from 1937 to 1941, when he was made an associate in psychiatry as well as an instructor in psychiatric industrial hygiene at the Harvard School of Public Health.

MICHIGAN

Counties May Vote for Health Departments.—Under new legislation the twelve counties in the state which do not have the services of a local health department may now take the initiative in providing them. A petition signed by 5 per cent of the electors of the county can require the board of supervisors to place the question of establishing a health unit on the ballot at the next general election. A majority vote can require the establishment of the department.

Hearing Consultants Available to Michigan Schools.—The Michigan Department of Health is again offering the services of two hearing consultants to Michigan schools in continuation of the hearing program begun in January 1943. More than thirty-eight counties have already requested the services of consultants. Each child with a hearing loss detected by tests using an audiometer is taken to a hearing specialist for examination and medical care. Since the program began, group hearing tests have been given to 214,290 children in forty-three counties in the state. Of these, 3 per cent showed some loss of hearing. Of those who received medical treatment, 75 per cent improved, about 50 per cent to normal hearing. Requests for the hearing conservation program are made through local health departments.

MISSISSIPPI

Medical Education Awards to Encourage Rural Practice.—The Mississippi Medical Education Board has approved ninety-three medical aid awards to students who have agreed to return to rural Mississippi to practice medicine after the completion of their education. The students may study in any university of their choice. The board was created in accordance with legislation passed by the legislature in 1946.

Changes in Health Officers.—Dr. James A. Sproles Jr., Columbia, assumed duties as director of the Adams County health department July 1, succeeding Dr. Kenneth W. Navin, who became district supervisor for the state board of health. Dr. Sproles, a 1936 graduate of Tulane University of Louisiana School of Medicine, New Orleans, joined the state department of public health in 1939 and prior to entering the army in 1944 was health officer for Marion County. He has been health director for Alcorn and Tishomingo counties.

MISSOURI

Mediterranean Theater Surgeons' Meeting.—The Excelsior Surgical Club, a national organization of surgeons who served in the Mediterranean theater during World War II, will meet in St. Louis, October 17-18. The Edward D. Churchill lecture will be presented by Dr. Evarts A. Graham, St. Louis, at the St. Louis Medical Society, 8:30 p. m., October 17. The lecture was established in 1946 in honor of Dr. Churchill, the John Homans professor of surgery at Harvard Medical School, Boston, who was chief surgical consultant in the Mediterranean theater of operations during World War II.

Jackson County Health Forum.—The Jackson County Health Forum 1947-1948 lecture series began September 17 with Dr. M. Murray Peshkin, New York, speaking on "Hay Fever and Asthma." Other scheduled lectures, all open to the public without charge, are: Dr. Arnold S. Jackson, Madison, Wis., "Goiter and Other Diseases of the Thyroid Gland"; Dr. Austin E. Smith, Chicago, "Pink Pills and Pale People"; Dr. Franklin G. Ebaugh, Denver, "The Mind and the Body"; Dr. Arlie R. Barnes, Rochester, Minn., "Heart Disease"; Dr. Herman M. Jahr, Omaha, "Why I Can't Sleep," and Dr. Morris Fishbein, Chicago, Editor, THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, "Keep Fit and Like It." All lectures will be held in the Little Theatre of the Municipal Auditorium at 8:15 p. m. on the third Wednesday of each month.

NEW YORK

Infant Diarrhea Closes Hospital Ward.—The maternity ward at Deaconess Hospital, Buffalo, was closed August 27, pending results of an investigation by the health department into an outbreak of diarrhea blamed for 8 infant deaths in the preceding two weeks. A total of 36 cases of the illness was reported.

Society Elections.—The officers of the New York Psychoanalytic Society for 1947-1948 are Dr. Sandor Lorand, New York, president; Dr. William H. Dunn, New York, vice president; Dr. John Frosch, New York, secretary, and Dr. Harry I. Weinstock, New York, treasurer.——At the annual conference of health officers and public health nurses, Saratoga Springs, July 28-31, the New York State Health Officers Association elected Dr. George E. Sanders, Greece, president; Dr. H. Burton Doust, Syracuse, treasurer, and Dr. Eldred J. Stevens, Hammondsport, secretary.——The New York State Association of School Physicians at its annual session on June 28 elected Dr. Adele Brown, Oswego, president, and Dr. Adfur E. Maines, Kenmore, secretary-treasurer.

Rochester Academy Receives Library Gifts.—A library estimated at 1,500 volumes has been willed to the Rochester Academy of Medicine by the late Dr. Clarence V. Costello, Holland, Mich., and will be set up in a special collection available in the fall. Dr. Costello was formerly an instructor in surgery at the University of Rochester School of Medicine and Dentistry. He died May 31.——"The Edward L. Hanes Collection," including more than one hundred and forty volumes on neurology and allied subjects, two hundred books on general medicine, bound journals and reprints, has been given to the Rochester Academy of Medicine. The collection was that of the late Dr. Edward L. Hanes, a leader in academy affairs for many years, and has been presented by his widow to the academy.

New York City

Permit Required of Delicatessen Stores.—A permit from the health department will be required of all delicatessen stores, box-lunch and catering firms beginning November 1, in accordance with an amendment to the sanitary code adopted by the board of health September 9. The amendment was passed after a survey that had revealed unsanitary conditions in such places.

Hofheimer Foundation Laboratories.—A $75,000 grant from the Nathan Hofheimer Foundation, Inc., New York, has been received by the New York University-Bellevue Medical Center Fund with a stipulation that it be used to establish the Nathan Hofheimer Foundation Laboratories for basic research in psychosomatic disorders. The sum has been added to the New York University-Bellevue Medical Center Fund, whose goal is $15,575,000.

Hospital News.—Hospital construction costing $7,698,163 has been authorized by the board of estimate of New York City. The largest item was $4,863,000 for the new Florence Nightingale Hospital at 163d Street and Fort Washington Avenue. The board also appropriated $1,365,000 for foundation work on a new chronic disease hospital on Welfare Island. Other appropriations were: $262,000 for modernization of equipment in all hospitals and $881,500 for preliminary work on the projected new tuberculosis and chronic disease hospital on the grounds of Kings County Hospital. Immediate construction of the first part of the $7,000,000 Alfred E. Smith Memorial Wing of St. Vincent's Hospital has been authorized as a part of the $25,000,000 building construction program of the New York Archdiocese.

OKLAHOMA

Annual Meeting of Clinical Society.—The seventeenth annual meeting of the Oklahoma City Clinical Society will be held October 27-30 at the Biltmore Hotel, Oklahoma City. The program comprises a clinical pathologic conference, general assemblies, postgraduate courses, round table luncheons, dinner meetings and commercial exhibits. Among the guests will be Drs. Edward D. Allen, Chicago; William A. Altemeier, Cincinnati; Carl E. Badgley, Ann Arbor, Mich.; Edward L. Bortz, President of the American Medical Association, Philadelphia; A. Carlton Ernstene, Cleveland; Wiley D. Forbus, Durham, N. C.; Thomas E. Jones, Cleveland; H. Dabney Kerr, Iowa City; Linwood D. Keyser, Roanoke, Va.; Edward L. King, New Orleans; Frank D. Lathrop, Boston; George M. Lewis, New York; Samuel F. Marshall, Boston; Herbert C. Miller Jr., Kansas City, Kan.; Edith L. Potter, Chicago; C. Wilbur Rucker, Rochester, Minn.; Cyrus C. Sturgis, Ann Arbor, Mich., and Elmer G. Wakefield, Rochester, Minn. They will discuss gynecology, surgery, medicine, pathology, roentgen therapy, urology, otolaryngology, ophthalmology, dermatology and pediatrics. The registration fee is $15. For further information address the Executive Secretary, 512 Medical Arts Building, Oklahoma City.

SOUTH CAROLINA

Dr. Guyton Heads State Hospital Division.—The state board of health has appointed Dr. Clarence L. Guyton, Greenville, as head of the newly established hospital division of the state board of health. The division will have a full time staff consisting of a director, an architect, an engineer and clerical and stenographic help. The department will carry out provisions according to the State Hospital Construction Act, which requires the licensing, inspection and regulation of hospitals and related institutions as defined in the act; creates a hospital licensing council, and prescribes its composition and power. Dr. Guyton was recently health commissioner of Greenville. Before coming to the state board of health in 1936, Dr. Guyton was in administrative charge of a hospital in North Carolina.

WASHINGTON

University Accepts Ophthalmology Library.—Dr. Frederick W. Adams, Carmel, Calif., a retired physician of Seattle, has presented the new medical school of the University of Washington, Seattle, a collection of books on ophthalmology. There are two hundred and fifteen bound volumes and many unbound medical journals. Since retirement Dr. Adams has indulged in his hobby and has been a frequent exhibitor in the Physicians Art Association.

Community Honors Physician.—Dr. Carl J. Hoffmann, Woodland, was guest of honor at a picnic given in his honor at Ariel Dam on August 24 and attended by over 3,000 patients and friends. A leather book with his likeness engraved thereon containing photographs and clippings was presented along with a check for $2,600. The latter the doctor said would be used for some worthy community project. Dr. Hoffmann has been practicing in Woodland for over thirty-eight years.

Tumor Registry Set Up.—The Washington State Tumor Registry has been set up at the University of Washington, Seattle, under the sponsorship of the state society of pathologists, the University of Washington School of Medicine and the state health department. This clearing house will afford physicians throughout the state consultation service in diagnosing cancer. Pathologists throughout Washington will submit to the registry duplicate microscopic slides of all cancerous and questionable tumors as well as certain benign tumors coming into their laboratories. The expenses of the registry will be defrayed by the cancer control section of the state health department, and the pathologists' society will act in an advisory capacity. Practicing pathologists under the registry work free of charge should indigent patients need medical aid.

WEST VIRGINIA

Annual District Health Conferences.—The annual northern district health conference will be held under the auspices of the state department of health at the Stonewall Jackson Hotel, Clarksburg, October 17. Among the speakers will be Dr. Newman H. Dyer, Charleston, state health commissioner, who will speak on the tuberculosis law passed by the 1947 legislature, and Dr. Alexander Witkow, director, Bureau of County Health Work, whose topic will be "The Next Year in County Health Work." Section meetings will be held for health officers, public health nurses and sanitarians. The southern district health conference is scheduled for Beckley, October 20. Subjects to be discussed include the value of sanitation in recreation facilities, improved school sanitation, keeping active tuberculosis patients in sanatoriums, and community-school health councils. Section meetings will be held in the afternoon.

Foundation Appoints State Medical Advisory Committee.—A West Virginia Medical Advisory Committee to the National Foundation for Infantile Paralysis has been appointed by Dr. Hart E. Van Riper, medical director of the foundation. The committee is composed of Drs. Frank J. Holroyd, Princeton; Cecil O. Post, Clarksburg; Justus C. Pickett, Morgantown; L. Rush Lambert, Fairmont; Jack Basman and Howard A. Swart, Charleston, and Mr. Charles Lively, Charleston, executive secretary of the West Virginia State Medical Association, ex officio. The committee has been appointed to promote cooperation between the National Foundation and the medical profession in West Virginia, with the idea of providing the state representative competent medical advice in matters pertaining to poliomyelitis epidemic preparedness, epidemic medical service and health education.

WISCONSIN

Graduate Course in Internal Medicine.—The American College of Physicians is sponsoring a course in internal medicine at the University of Wisconsin Medical School, Madison, November 3-14. Registration for participation will be done through the American College of Physicians, 4200 Pine Street, Philadelphia 4. The fee to college members will be $60 and to nonmembers $120. Maximum registration will be twenty-five.

Course in Cardiology.—The University of Wisconsin Medical School will repeat its intensive course in cardiology October 20-24. The work includes rudiments of electrocardiographic interpretation, a review of the principles of orthodiascopy, the therapy of hypertensive cardiac disease and the arrhythmias, a review of the current concepts of the treatment of rheumatic fever and other material of a practical character. The course, limited to fifteen physicians, fee $25, will be under the supervision of Drs. Chester M. Kurtz and Herman H. Shapiro of the department of cardiology. Details may be obtained from Dr. Llewellyn R. Cole, Coordinator of Graduate Medical Education, The Medical School, Madison 6, Wis.

GENERAL

Southern Psychiatric Association.—The annual meeting of the Southern Psychiatric Association will be held at the Hotel Thomas Jefferson, Birmingham, Ala., October 13-14, under the presidency of Dr. Robert H. Felix, Washington. Numerous prominent speakers will appear on the program. All members of the Medical Association of Alabama are cordially invited to attend.

American Public Health Association Meeting.—The seventy-fifth annual meeting of the American Public Health Association in Convention Hall, Atlantic City, N. J., October 6-10, will be under the presidency of Dr. Harry S. Mustard, New York. There will be section meetings on food and nutrition, epidemiology, maternal and child health, school health, engineering and industrial health, public health education, nursing, industrial hygiene and dental health.

Van Meter Prize Award.—The American Association for the Study of Goiter again offers the Van Meter Prize Award of three hundred dollars for the best essays submitted concerning original work on problems related to the thyroid gland. Essays may cover either clinical or research investigations, should not exceed 3,000 words and must be in English, typewritten in double spaced copy. The award will be made at the annual meeting of the association in Toronto May 6-8, providing essays of sufficient merit are presented in competition. Address Dr. Thomas C. Davison, Corresponding Secretary, 207 Doctors Building, Atlanta 3, Ga.

Study of Congenital Malformations and Maternal Infection.—To collect data on any relationship between maternal infections and congenital malformations, the American Academy of Pediatrics and the National Society for the Prevention of Blindness are sponsoring a nationwide survey. Questionnaires are being sent to obstetricians, ophthalmologists and pediatricians, seeking the reporting of cases of German measles in expectant mothers and of children with congenital defects that might be attributed to other infections in the expectant mother, such as measles, chickenpox, mumps and influenza. One year will be spent in collecting data; then a report will be made. Data will be studied by the following committee: Drs. Herbert C. Miller, professor of pediatrics, University of Kansas School of Medicine, Lawrence-Kansas City, Kan.; Stewart H. Clifford, Weston, Mass.; James L. Wilson, Ann Arbor, Mich., and Herman Yannet, Southbury, Conn. Physicians knowing of cases are urged to register them with Dr. Miller, chairman of the committee.

Opportunity for Careers in Academic Medicine.—An opportunity to start a career in academic medicine is offered by the John and Mary R. Markle Foundation to young scientists with the necessary training to hold regular faculty appointment and to conduct original research. The new program of postfellowship grants will be conducted in cooperation with accredited medical schools in the United States and Canada. Grants of $25,000, payable to the cooperating school at the rate of $5,000 annually toward the support of each successful candidate or his research or both, will be available beginning with the academic year 1948-1949. If the plan proves successful the foundation will appropriate a total of $1,250,000 payable to the schools by 1953. Candidates will be recommended by medical schools and will be limited to young men and women with a particularly strong interest in research and teaching in any of the clinical or preclinical sciences or in the sciences basic to medicine. They will have had training in some special field or combination of fields to qualify them to receive a regular faculty appointment and to conduct original research. The final choice of "Scholars in Medical Science" will be made, on the basis of the schools' recommendations, by regional committees appointed by the foundation. About fifty will receive appointments during the five year period. The school will determine salary and academic rank, encourage research by setting reasonable limits on nonresearch activities, provide laboratory facilities and, if necessary, make a financial contribution toward support of the scholar's work. The program is the result of a survey of medical research and education recently made by the foundation, which shows that while there are scholarships and other forms of financial aid for the student in the course of his scientific training, and while there are funds available to the scientist once his name is made, there are few sources of help at the beginning of the career of the man who chooses academic medicine. Persons interested in being considered as candidates are referred to deans of accredited medical schools for further information.

Prevalence of Poliomyelitis.—Reports of cases of poliomyelitis for the periods indicated have been received from the division of public health methods, U. S. Public Health Service:

	Week Ended			Total to		Total *	
Division and State	Sept. 13, 1947	Sept. 14, 1946	Median, 1942-1946	Sept. 13, 1947	Sept. 14, 1946	March 16-Sept. 13, 1947	March 17-Sept. 14, 1946
New England:							
Maine	8	2	2	28	18	25	18
New Hampshire	2	11	1	16	101	12	101
Vermont	0	1	2	20	20	12	16
Massachusetts	43	33	33	188	130	181	126
Rhode Island	16	4	0	108	29	107	29
Connecticut	19	6	12	87	53	84	45
Middle Atlantic:							
New York	129	87	87	522	732	486	699
New Jersey	22	16	20	146	159	140	153
Pennsylvania	65	19	19	246	162	232	150
East North Central:							
Ohio	213	55	30	600	426	590	411
Indiana	33	29	13	145	210	129	205
Illinois	106	193	66	517	1,438	495	1,430
Michigan	70	74	29	300	529	276	521
Wisconsin	17	121	31	98	681	74	668
West North Central:							
Minnesota	12	187	25	146	2,206	133	2,205
Iowa	12	42	29	97	350	89	341
Missouri	15	95	13	78	756	68	749
North Dakota	3	35	2	63	336	58	336
South Dakota	1	19	1	10	305	8	305
Nebraska	7	27	13	137	341	130	340
Kansas	8	64	10	64	575	46	571
South Atlantic:							
Delaware	11	0	1	116	11	116	11
Maryland	2	5	5	49	63	43	61
District of Columbia	3	0	2	9	15	7	14
Virginia	10	7	7	83	79	73	73
West Virginia	17	7	3	61	54	57	51
North Carolina	15	8	4	97	81	82	74
South Carolina	2	0	1	15	18	14	15
Georgia	3	9	4	50	125	43	117
Florida	5	17	6	70	480	45	431
East South Central:							
Kentucky	13	3	5	50	79	49	76
Tennessee	12	8	8	71	127	59	118
Alabama	1	10	3	38	328	25	325
Mississippi	0	14	3	36	241	19	224
West South Central:							
Arkansas	5	17	5	60	275	49	265
Louisiana	0	21	4	43	282	25	263
Oklahoma	1	11	11	40	277	29	271
Texas	4	28	28	140	740	115	712
Mountain:							
Montana	0	6	4	18	83	16	67
Idaho	9	3	1	93	20	83	20
Wyoming	0	10	1	14	90	11	89
Colorado	3	65	16	41	716	36	715
New Mexico	5	19	2	25	122	22	121
Arizona	1	5	2	28	86	25	83
Utah	1	7	7	8	75	3	69
Nevada	0	0	0	0	3	0	3
Pacific:							
Washington	9	40	25	89	260	81	227
Oregon	6	17	12	55	103	50	99
California	19	153	46	601	1,390	452	1,303
Total	958	1,620	...	5,616	15,780†	5,004	15,313
Median, 1942-1946	...	....	1,020	8,009		7,612	

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* Last two columns show reported incidence since approximate seasonal low week (week ended between March 15 and 21).

† Figures changed by corrected reports.

Deaths in Foreign Countries

Professor Ferdinand Flury, M.D., for many years professor of pharmacology, University of Würzburg, Bavaria, died recently, aged 70. He was very active as a research worker in the field of toxicology. With Zangger he edited "Lehrbuch der Toxikologie," Berlin, 1928, and in collaboration with F. Zernik he wrote "Schädliche Gase," Berlin, 1931.

Marriages

Marshall Arthur Freedman, Gunter Field, Ala., to Mrs. Betty Borwick Shapiro at Denver, August 16.

Charles J. Baker, to Mrs. Virginia Gilliland, both of Fort Dodge, Iowa, in Webster City, March 29.

Louis Franklin Burkley III to Miss Martha-Anne Dougherty, both of Easton, Pa., May 23.

W. David Francisco, Kansas City, Kan., to Miss Jean L. Knablein of Erie, Pa., August 9.

Ralph Eichhorn, New York, to Miss Fredell Lack at La Porte, Texas, July 10.

Deaths

Charles Sumner Bacon ⊕ Chicago; born in Spring Prairie, Wis., July 30, 1856; Chicago Medical College, 1884; professor of obstetrics from 1903 to 1913, professor of obstetrics and head of the department of obstetrics, 1913-1914, and of obstetrics and gynecology, 1914 to 1926, at the University of Illinois College of Medicine, where the Bacon lectures were named in his honor and where since 1926 he had been emeritus professor of obstetrics and gynecology; formerly professor of obstetrics at the Chicago Policlinic; chairman of the Section on Obstetrics and Diseases of Women, 1905-1906, of the American Medical Association, of which he was an Affiliate Fellow; past president of the Chicago Medical Society and the Chicago Gynecological Society; fellow of the American Association for the Advancement of Science and the American College of Surgeons; member of the Chicago Pathological Society, Institute of Medicine, Chicago Society of Medical History and the Chicago Academy of Sciences; specialist certified by the American Board of Obstetrics and Gynecology, Inc.; author of "Obstetrical Nursing"; chief of staff, Booth Memorial Hospital; consulting gynecologist at the City of Chicago Municipal Sanitarium; consulting obstetrician at the Grant Hospital, where he died July 10, aged 90, of bronchopneumonia and myocarditis.

William John Carrington ⊕ Clinton, Iowa; born in Jefferson City, Mo., in 1884; Jefferson Medical College of Philadelphia, 1908; vice president of the American Medical Association, 1942-1943; member, past president and corresponding secretary of the Medical Society of New Jersey; specialist certified by the American Board of Obstetrics and Gynecology, Inc.; fellow of the American College of Surgeons; past president of the Jefferson Medical Alumni Association; served during World War II; past president of the school board in Ventnor City and the Kiwanis International; formerly practiced in Atlantic City, N. J., where he had been affiliated with the Atlantic City Hospital and the Municipal Hospital; formerly on the staff of the Pine Rest Hospital in Northfield, N. J.; head of the surgical service of the Schick General Hospital; died July 24, aged 63, of carcinoma.

Hugh Kling Berkley ⊕ Beverly Hills, Calif.; born in Woodbine, Ia., in 1889; University of California Medical School, San Francisco, 1914; associate clinical professor of pediatrics at the University of Southern California School of Medicine, Los Angeles; specialist certified by the American Board of Pediatrics; served during World War I; member of the American Academy of Pediatrics; past president of the Southwestern Pediatric Society; on the staffs of the Los Angeles Children's, St. Vincent's, Hollywood Presbyterian, Cedars of Lebanon and California Lutheran hospitals as well as the Good Samaritan Hospital, where he died July 11, aged 57, of cerebral hemorrhage and arteriosclerosis.

Albert O. Singleton ⊕ Galveston, Texas; born in Mount Peak, Texas, July 16, 1882; University of Texas School of Medicine, Galveston, 1910; professor of surgery and chairman of the department at his alma mater; member of the founders group of the American Board of Surgery; served as president of the Texas Surgical Society and as vice president of the American College of Surgeons, of which he had been a fellow; member of the American Surgical Association, Southern Surgical Association; American Association for the Surgery of Trauma and the American Association for Thoracic Surgery; surgeon in chief of the John Sealy Hospital; died June 12, aged 64, of coronary thrombosis.

Parker Garfield Borden, Canandaigua, N. Y.; University of Buffalo School of Medicine, 1904; member of the American Psychiatric Association and the American Medical Association; served during World War I; formerly clinical director of the Veterans Administration Hospital and chief neuropsychiatrist of the Buffalo regional office of the Veterans Administration; at one time affiliated with the Veterans hospitals at Palo Alto, Calif., Philadelphia and Northampton, Mass.; formerly surgeon for the U. S. Public Health Service; died in the Buffalo General Hospital July 4, aged 68, of heart disease.

David Clare Budge, Logan, Utah; born in Paris, Idaho, Sept. 27, 1873; also a dentist; Rush Medical College, Chicago, 1900; for many years president of the state board of medical examiners; past president of the Utah State Medical Association and the Cache Valley Medical Society; fellow of the American College of Surgeons; member of the American Medical Association; for many years medical director of the William Budge Memorial Hospital; director of the First Security Corporation; died June 21, aged 73, of cardiorenal disease.

Howard S. Allen ⊕ Woodbury, Conn.; Yale University Medical School, New Haven, 1904; medical examiner and health officer of Woodbury; for many years member of the board of education; died in the Woodbury Hospital July 5, aged 65, of uremia.

John Vincent Allen Jr., Philadelphia; Hahnemann Medical College and Hospital of Philadelphia, 1917; member of the American Medical Association; served overseas during World War I; died in the Hahnemann Hospital June 28, aged 52, of congestive heart disease.

Harry Burgwyn Baker, Richmond, Va.; University College of Medicine, Richmond, 1900; died June 14, aged 78, of arthritis.

Llewellyn Edwin Barnes, Chicago; Reliance Medical College, Chicago, 1910; member of the American Medical Association; on the staff of the Evangelical Hospital; died in Hammond, Ind., July 23, aged 68, of cerebral hemorrhage.

Jesse A. Bates, Oklahoma City; St. Louis College of Physicians and Surgeons, 1923; on the staffs of the Wesley and Polyclinic hospitals; died June 30, aged 58, of coronary occlusion.

Felix J. Baur, Milwaukee; Chicago College of Medicine and Surgery, 1915; member of the American Medical Association; for many years fire department surgeon; on the staff of St. Anthony's Hospital; died in Ashland, Wis., July 2, aged 55, of coronary thrombosis.

Francis Clayton Bennett ⊕ Monroe, La.; University Medical College of Kansas City, Mo., 1900; served one term as a representative in the state legislature; past president of the Louisiana State Medical Society and the Ouachita Parish Medical Society; fellow of the American College of Surgeons; affiliated with St. Francis and Conway Memorial hospitals; died June 27, aged 77, of heart disease.

Irvin H. Betts ⊕ Visalia, Calif.; University of California Medical School, San Francisco, 1915; past president of the Tulare County Medical Society; served as a medical officer in Siberia during World War I; affiliated with the Visalia Municipal Hospital; died in San Francisco July 1, aged 58, of aortic stenosis.

Robert Le Roy Browning, Pawnee, Okla.; Birmingham Medical College, 1911; member of the American Medical Association; served during World War I; on the staff of the Pawnee Municipal Hospital; died in the Enid (Okla.) General Hospital June 15, aged 64, of abscess of the liver following resection of the stomach.

Calvin E. Carney, Delphi, Ind.; Medical College of Indiana, Indianapolis, 1895; member of the American Medical Association; president of the city board of health; died in the Methodist Hospital, Indianapolis, July 3, aged 79, of coronary thrombosis.

Charles Augustus Carpenter, Caldwell, N. J.; Baltimore Medical College, 1909; member of the American Medical Association; police surgeon for both the Caldwell and West Caldwell police departments; died July 6, aged 68, of carcinoma of the prostate.

Elias Howell Cross Jr., Gadsden, Ala.; Vanderbilt University School of Medicine, Nashville, 1926; member of the American Medical Association; served during World War I; affiliated with the Holy Name of Jesus Hospital; died June 22, aged 48, of cardiac thrombosis.

Russel Oscar Davidson, Buffalo; Hahnemann Medical College and Hospital of Philadelphia, 1923; served during World War I; on the staff of the Millard Fillmore Hospital; died in the U. S. Marine Hospital June 13, aged 49, of Laënnec's cirrhosis.

Leo Joseph Doll, Buffalo; University of Buffalo School of Medicine, 1899; member of the American Medical Association; died in the Edward J. Meyer Memorial Hospital June 4, aged 69, of arteriolar nephrosclerosis and bronchitis.

Douglas Shearer Duncan, Peoria, Ariz.; Fort Worth School of Medicine, Medical Department of Fort Worth University, 1912; served during World War I; for many years affiliated with the Indian Service; died June 13, aged 56, of heart disease.

Frank Kingsley Dutton ⊕ Springfield, Mass.; Tufts College Medical School, Boston, 1915; fellow of the American College of Surgeons; for many years affiliated with the Springfield Hospital; died at Ten Mile Lake, Minn., June 28, aged 55, of coronary thrombosis.

Amelia Levinson Gates, San Francisco; Cooper Medical College, San Francisco, 1894; died in Carmel, Calif., June 2, aged 81, of hypertensive cardiovascular disease.

Thomas Edmund Peachey Gocher, San Rafael, Calif.; University of Toronto Faculty of Medicine, Toronto, Canada, 1915; member of the American Medical Association; died June 22, aged 56, of uremia.

Charles Howard Halverstadt ⊕ Perrysville, Pa.; Western Pennsylvania Medical College, Pittsburgh, 1899; died June 15, aged 77, of heart disease.

Levi A. Harris, Gaylord, Mich.; Detroit Medical College, 1884; member of the American Medical Association; past president of the Otsego, Montmorency, Crawford, Oscoda, Roscommon and Ogemaw Counties Medical Society; died in the Mercy Hospital, Grayling, June 24, aged 88, of heart disease.

George David Hauberg ⊕ Moline, Ill.; Northwestern University Medical School, Chicago, 1911; past president of the Rock Island County Medical Society and of the Iowa and Illinois Central District Medical Association; on the staffs of the Moline Lutheran and Public hospitals; died June 23, aged 63, of carcinoma of the prostate.

Hezekiah Haws, Warfield, Ky.; Kentucky School of Medicine, Louisville, 1903; died in Matewan, W. Va., June 26, aged 73, of injuries received when his jeep was struck by a railroad train.

Howard Clifford Hyndman ⊕ Cincinnati; Medical College of Ohio, Cincinnati, 1909; died in the Christ Hospital June 25, aged 64, of auricular ventricular block.

Frederick Gibson James ⊕ Greer, S. C.; University of Tennessee Medical Department, Nashville, 1894; died in the General Hospital, Greenville, June 20, aged 75, of cerebral embolus.

William Henry Lake, Jackson, Mich.; Northwestern University Medical School, Chicago, 1910; member of the American Medical Association; served during World War I; on the staffs of the W. A. Foote Memorial and Mercy hospitals; died in Traverse City June 24, aged 62, of coronary infarction.

John Aden Lewis Sr., New Orleans; Tulane University of Louisiana School of Medicine, New Orleans, 1915; instructor in medicine at his alma mater; member of the American Medical Association; on the staffs of the Baptist and Charity hospitals; died June 24, aged 65, of coronary disease.

Holton Murschamp Lowe ⊕ Battle Creek, Mich.; University of Michigan Medical School, Ann Arbor, 1916; past esident of the Calhoun County Medical Society; on the affs of the Community Hospital and the Leila Y. Post Montgomery Hospital, where he died June 21, aged 71, of uremia.

Curtis Carl McMackin, Springfield, Ill.; Missouri Medical College, St. Louis, 1895; died in the Memorial Hospital June 20, aged 89, of a fractured hip received in a fall.

Charles W. Meriwether, Pomona, Calif.; St. Louis College of Physicians and Surgeons, 1898; died May 21, aged 81.

Harold Faulkner Miller ⊕ Louisville, Ky.; University of Louisville School of Medicine, 1925; died June 19, aged 45, of coronary occlusion.

William J. Miller, La Valle, Wis.; Milwaukee Medical College, 1902; formerly member of the state board of health; died in Madison June 16, aged 77, of prostatic hypertrophy and acute pyelonephritis.

Robert Edgar Miltenberger ⊕ Spring Valley, Ill.; Rush Medical College, Chicago, 1910; fellow of the American College of Surgeons; served during World War I; health officer; past president of the Bureau County Medical Society; on the staff of St. Margaret's Hospital; died June 18, aged 67, of coronary occlusion.

Samuel B. Moore, Tucapau, S. C.; Medical College of the State of South Carolina, Charleston, 1910; died in the General Hospital, Spartanburg, June 23, aged 64, of an injury received in a fall.

George Burr Morris, Bluffton, Ind.; Indiana Medical College, School of Medicine of Purdue University, Indianapolis, 1906; for many years city health officer; served during World War I; major, medical reserve corps, U. S. Army, not on active duty; died June 17, aged 67, of coronary occlusion.

Charles Thomas Osterloh, Pittsburgh; Western Pennsylvania Medical College, Pittsburgh, 1901; member of the American Medical Association; veteran of the Spanish-American War; medical examiner for the draft boards during World War I and World War II; on the staffs of St. John's Hospital and the Allegheny General Hospital, where he died June 20, aged 71, of carcinoma of the cecum.

Ralph Ernest Pond, Meadville, Pa.; Homeopathic Hospital College, Cleveland, 1892; died in the City Hospital June 1, aged 79, of chronic myocarditis.

Albert Sensabough Powe, Cranston, R. I.; Eclectic Medical Institute, Cincinnati, 1890; Tufts College Medical School, Boston, 1899; died June 14, aged 83, of carcinoma.

Emil Camille Robitshek ⊕ Minneapolis; University of Minnesota College of Medicine and Surgery, Minneapolis, 1903; clinical assistant professor of surgery at his alma mater; specialist certified by the American Board of Surgery; fellow of the American College of Surgeons; past president of the Minnesota Surgical Society; on the staffs of the Abbott Hospital and the Eitel Hospital, where he died June 23, aged 66, of lymphosarcoma.

James Arthur Rowley ⊕ Flint, Mich.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1903; served on the staff of the Hurley Hospital, where he died June 22, aged 72, of cerebral hemorrhage.

Moses Victor Safford, Boston; Medical School of Maine, Portland, 1893; member of the American Medical Association; served as a surgeon in the immigration service, with the U. S. Public Health Service and as deputy health commissioner of Boston; at one time epidemiologist of the city health department; died June 20, aged 79, of carcinoma of the prostate.

William Frederick Schroeder ⊕ Rock Island, Ill.; University of Minnesota Medical School, Minneapolis, 1926; past president of the Rock Island County Medical Society; served overseas during World War I; examining physician for a draft board during World War II; fellow of the American College of Physicians; served as chief of staff of St. Anthony's Hospital, where he died June 10, aged 61, of acute leukemic reticuloendotheliosis.

Oliver William Shellem, Denver, N. C.; North Carolina Medical College, Charlotte, 1909; died in Asheville June 10, aged 60, of arteriosclerosis and uremia.

Arthur William Sieker ⊕ Plymouth, Wis.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1900; died in St. Nicholas Hospital, Sheboygan, June 19, aged 73, of mitral stenosis.

Henry Stempa ⊕ Wethersfield, Conn.; Friedrich-Wilhelms-Universität-Medizinische Fakultät, Berlin, Prussia, 1898; died in the Hartford Hospital June 12, aged 68, of cerebral hemorrhage.

Robert Allan Stimpson, Detroit; Detroit Homeopathic College, 1907; formerly on the staff of the Grace Hospital; died June 13, aged 68, of multiple arthritis.

Edward Clark Streeter, Stonington, Conn.; Northwestern University Medical School, Chicago, 1901; curator of the museum collections of Yale Medical Library and formerly visiting professor of the history of medicine at the Yale University Medical School in New Haven; died June 17, aged 72, of coronary disease.

Robert Edward Trout, Oaktown, Ind. (licensed in Indiana in 1904); died June 19, aged 91, of myocarditis.

Arthur John Walscheid ⊕ North Bergen, N. J.; Dartmouth Medical School, Hanover, N. H., 1897; formerly adjunct professor of gynecology at the New York Polyclinic Medical School and Hospital, New York; affiliated with the North Hudson Hospital in Weehawken, where he died June 14, aged 72, of pulmonary embolism.

Todd Pope Ward ⊕ Mount Vernon, Ill., Jefferson Medical College of Philadelphia, 1903; served during World War I; died in the Good Samaritan Hospital June 9, aged 66, of cerebral hemorrhage.

Robert Francis Weaver, St. Clair, Pa.; University of Pennsylvania Department of Medicine, Philadelphia, 1907; member of the American Medical Association; served as an officer during World War I; an examining physician for a draft board during World War II; chief gynecologist at the Pottsville (Pa.) Hopital; died in the Mayo Clinic, Rochester, Minn., June 23, aged 63, of cardiac failure and paralytic ileus.

Albert Andrew Weber, Bessie, Okla.; Rush Medical College, Chicago, 1903; member of the American Medical Association; died May 21, aged 69, of endocarditis.

Richard J. Williams, Dunning, Neb.; Western University Faculty of Medicine, London, Ont., Canada, 1895; died in Ansley May 15, aged 76, of chronic myocarditis.

John W. Wills, Weslaco, Texas (licensed in Texas, under the Act of 1907); died June 2, aged 78, of coronary thrombosis.

James Melvin Young, Jefferson, Iowa; Omaha Medical College, 1898; died May 15, aged 77, of coronary occlusion.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Aug. 16, 1946.

The Outbreak of Infantile Paralysis

The outbreak of infantile paralysis continues. In London there are now 165 suspected or confirmed cases in the hospitals, and fresh cases and deaths are reported daily from various parts of the country. The twelve London teaching hospitals are opening units for the treatment of acute cases. In some hospitals the patients will be treated in isolation wards, with special medical and nursing staffs. Elsewhere they will be admitted to the general wards and nursed with special "barrier" technic which eliminates risk to other patients. As a precaution against infection, functions which bring children together, such as school camps, are being canceled and the use of swimming pools is being forbidden to children under 14.

The World Federation of Pathologists

The European Association of Clinical Pathologists has met at Cambridge under the presidency of Dr. S. C. Dyke and reconstituted itself as a world federation of societies devoted to clinical pathology. The federation has defined its aims as (1) to develop clinical pathology—the application of pathology and allied sciences to medicine, (2) to have regard to the scientific and professional status of those engaged in its practice and (3) to foster international amity. A committee was appointed to call a meeting of delegates from as many interested associations as possible next November in Paris during the meeting of the French Société de biologie clinique to formulate a constitution and elect officers. The federation hopes to gain worldwide membership and invites societies devoted to clinical pathology to communicate with the secretaries—either Dr. W. H. McMennemy, pathologic department, Royal Infirmary, Worcester, England, or Dr. J. Ungar, Glaxo Laboratories, Greenford, Middlesex, England. The Czechoslovak Association of Clinical Pathologists, the French Société de biologie clinique and the Association of Clinical Pathologists of Great Britain have already signified their wish to join the federation. Medical practitioners or university graduates practicing clinical pathology who are members of the constituent bodies will thereby become members of the federation. Membership will be available also to those who are eligible but do not belong to a constituent body. The federation proposes to hold a conference at least once every three years at the same time and place as the summer meeting of one of its constituent bodies. It hopes that the first meeting will take place in the summer of 1948.

The Training of Clinical Pathologists

In January the Association of Clinical Pathologists appointed a committee to consider the training and definition of consultants in clinical pathology—a recently constituted specialty. The committee has recommended that five years after the pathologist has qualified in medicine should be devoted to gaining further clinical experience (one year), working in a university department (one year) and working in a department of clinical pathology (two years). In the remaining year the student should extend his experience as he wishes. The object in working in a university department is to train the student in scientific method and to introduce him to an atmosphere where research is being vigorously pursued. The committee also suggests that students should be encouraged to take a diploma in bacteriology or in clinical pathology. While working in a department of clinical pathology in a large hospital or a group laboratory the student should receive training in all branches of pathology, which should include hematology, bacteriology, chemistry and morbid anatomy. The committee recommends that a special committee be set up to approve laboratories suitable for training. Students who have obtained a first or second class science degree—for example, in physiology or in chemistry—or a doctorate in philosophy should be eligible for recognition as specialists in four instead of in five years.

The committee recognizes that these criteria cannot necessarily be applied to existing clinical pathologists or to some of those in training. It therefore advocates that specialists at present recognized should have been registered for a minimum of five years and have had at least four years' laboratory experience. They should also hold a higher medical or scientific qualification or have contributed to the advance of medical or scientific knowledge. In accordance with a decision of the Royal College of Physicians the committee does not think that a register of specialists in clinical pathology should be compiled. Because of the financial support that these years of training necessitate and the lack of which debars poorer students from undertaking them, the committee quotes the recommendation of the committee on neurology of the Royal College of Physicians that suitable candidates for the specialty should be supported by scholarships, government grants or otherwise.

A Photographic Display of Venereal Diseases

At the request of the Ministry of Health, the Central Office of Information is making a new approach to the problem of preventing venereal disease. They are to show the venereal diseases photographic display set to factories and other managements employing over 500 people. This request has been made in view of recent figures of venereal diseases, which show an increase on the wartime figures, which already were an increase on the peacetime ones. The exhibition was produced for the Ministry of Health with the cooperation of the Central Council for Health Education. It was offered in 1945 to factories and local authorities on free loan. So far it has been borrowed by 155 factories and 53 local authorities. Reports from the factories show that it was well received, the most frequent commentary being that it should have been made available earlier. This was heard most frequently from the younger generation, who were made to realize the serious effects of infection.

Air Travel Health Problems

The Ministry of Health is exercised by the ever increasing health problems of airports. One example is an outbreak of smallpox due to two soldiers who arrived by air from Naples and sickened from the disease. As a result there were 4 secondary cases in this country, all in unvaccinated persons. These were the only cases that originated in 1945. A third case reached England on December 9 from India. The patient was ill when he arrived, but no secondary cases occurred. Surveillance of air passengers is unusually difficult. Those arriving from abroad are now handed a card on which a notice is printed in French and English warning them that they may have been in contact with some infectious disease without knowing it. They are urged, if they fall ill within twenty-one days of arrival, at once to consult a doctor and show him the card.

International Physiologic Congress

More than a thousand delegates from thirty-six countries have assembled at Oxford for the seventeenth International Physiological Congress, the first to be held since the war. At the opening plenary session the chair was taken by Sir Henry Dale, F.R.S., biochemist and pharmacologist. The program includes over 350 scientific communications, 75 demonstrations and 50 films. Much of the new knowledge discussed was the result of war research, such as Professor J. B. S. Haldane's discoveries on the action of high pressure oxygen in man and those of an American team on the effects of tight turns in airplanes on

Correspondence

VITAMIN D THERAPY IN ARTHRITIS

To the Editor:—I read, with great interest, the report on Vitamin D poisoning by Dr. Kaufman et al. in THE JOURNAL June 21. I should like to register my reactions to this article, both as to possible cause of death and to the manner in which it was presented for publication.

There is no doubt in my mind that the metastatic deposits mentioned in the report were due to vitamin D intoxication. Several valid cases are on record, and I have had 1 case (in ten years' study at the Arthritis Clinic at the Hospital for Special Surgery) which definitely followed the overzealous use of vitamin D preparations. However, I do not believe the Kaufman case is a clearcut instance of renal failure due to vitamin D intoxication. For instance, the patient had, according to the history, one hundred injections of gold. (If a small dose of only 5 mg. of gold was given at each injection—the average dose being 50—over 5 Gm. of gold would have been injected into the patient in two years.) It is well known that gold preparations are not entirely excreted, but could remain in the body for many months—even years. This could well explain the five months' pruritus she complained about prior to her last admission, since gold preparations are much more likely to produce itching than vitamins.

In this report, as well as all other papers dealing with vitamin D poisoning, mention is never made regarding any beneficial results from vitamin D. It seems strange that any patient would take Ertron for fourteen months without some relief.

The report was written by an author who had never used vitamin D in treating arthritis. Apparently the author had little to do with the treatment or observation of this patient, because many inaccuracies in reporting otherwise would not have been made. For instance, in describing the physical examination, it mentions a chronically ill "middle aged" woman, yet her given age was 65. Then the differential blood count is given as 77 per cent polys, 12 per cent lymphocytes, 4 per cent monocytes and 1 per cent eosinophils, a total of only 94 per cent of the cells being accounted for. Also the urine is described as being clear, yellow, alkaline, specific gravity 1.012, albumin 2 plus, sugar 1 plus, and epithelial cells in the sediment. (How can urine be clear and have a sediment?)

Then, it is stated, "The abscesses were not real abscesses," and then it is said, "Penicillin therapy was started because of the presence of Staphylococcus aureus in the culture." (Why wouldn't they be real abscesses if they contained staphylococci?)

A blood calcium of 147 mg. per hundred cubic centimeters is described, and one week later the calcium level was 130 mg. Is it possible that this could be a typographic error, since the highest calcium seen in our clinic was 20 mg. per hundred cubic millimeters, and this was considered doubtful by our laboratory?

A colloid cyst of the parathyroid is described in the autopsy findings. Could this have in any way contributed to the vast degree of calcium deposits along with the Ertron?

WILLARD H. SQUIRES, M.D.,
40 East 61st Street,
New York.

(With reference to the blood calcium mentioned in the preceding letter, a decimal point was omitted. The figures should read 14.7 and 13.0 mg., respectively. A correction to this effect was published in THE JOURNAL, July 12, page 971.—ED.)

PAINFUL PHANTOM FOOT

To the Editor:—In an article entitled Abolition of Painful Phantom Foot by Resection of the Sensory Cortex, by Drs. Echols and Colcough, which appeared in the August 23 issue of THE JOURNAL the statement appeared "He continued to complain of numbness and pain, however, and in October 1943 requested that his leg be amputated. Though the foot was fairly warm, amputation seemed advisable on the basis of the excruciating pain."

I should like to take issue with these statements. I do not believe that a patient's request should serve as an indication for amputation nor do I feel that excruciating pain, of itself, in a warm foot should be considered an indication for amputation.

A procedure much less formidable is available for the treatment of such excruciating rest pain. Smithwick and White in 1930 and Laskey and Silbert in 1933 advocated the relief of such pain either by the injection with alcohol of the sensory nerves supplying the foot (Smithwick and White) or by the section of the peripheral nerves of the foot (Laskey and Silbert). The appearance of a patient following the section of the sensory nerves is one of the most satisfying experiences. The change from a despondent person who has not slept for weeks and who demands amputation is dramatic. There is immediate relief from pain.

One wonders whether section of the nerves in Drs. Echols and Colclough's patient might not have avoided an amputation and the subsequent resection of the sensory cortex, with its train of unpleasant complications.

M. J. KUTISKER, M.D.
Peripheral Vascular Clinic,
New York University College of Medicine,
New York 16.

GLAUCOMA

To the Editor:—I believe most ophthalmologists would have difficulty in concurring with the opinions expressed in answer to the request for a description and treatment of glaucoma which appeared in Queries and Minor Notes (THE JOURNAL, p. 1515) of Aug. 23, 1947. While it is certainly difficult, if not impossible, to answer satisfactorily such questions in the space ordinarily available, there is nevertheless serious doubt as to the accuracy of the statements given. To limit the discussion to so-called chronic simple glaucoma was, undoubtedly, a reasonable plan, but the reply could have comprised somewhat more.

The authority quoted may well have meant what is pathetically true in the case of many persons with chronic simple glaucoma when he indicates, "serious loss of vision before the patient knows of any trouble at all." But there are often other well known and even almost distinctive clues that this misfortune is at hand, such as fulness of the eyes or head, headache, poor acuity in reduced illumination and frequent or unsatisfactory changes in lenses.

Mention of field changes, while their determination is a subjective test, hardly is to be considered a symptom unless there has been such progression of the disease as to cause difficulty because of reduction of the peripheral visual field. At that time, one scarcely speaks of early glaucoma. Contrary to the expressed notion, moreover, is the fact that the earliest central field change is not an enlargement of the blind spot, but rather ". . . depression with peripheral contraction, more pronounced on the nasal side, associated with a nasal step

. . . depression of the upper part of the central field between the blind spot and the horizontal meridian to the nasal side of the fixation point. As a rule, this depression is most manifest near the blind spot, constituting baring of the blind spot" (Traquair, H. M.: An Introduction to Clinical Perimetry, ed. 4, St. Louis, C. V. Mosby Company, 1944).

The statement which could seem to be open to the greatest doubt is the one indicating uniformly successful operative treatment. To begin with, I believe it would be hard to find any ophthalmologist who in any way would regard any of the glaucoma operations always successful, in the hands of any surgeon. The selection of operation is, as it always has been, a difficult choice, guided by many findings. Functional loss, as represented by field changes, provides the index of damage. Progression of these changes, whatever their extent originally, indicates usually the failure of the treatment then being utilized, and this even in the face of lower tensions as expressed by the tonometer. It is certainly safe to assume that there will be failures, and there are even some of us who are occasionally driven to wonder if there is any operative success.

One must assume that by control of "low tensions" by the miotics mentioned, it is meant the lower of the proved pathologically elevated intraocular pressures for the particular eye or eyes. At present, of course, there are two or three possibly clinically useful miotics other than those mentioned.

I presume that the word "iridodenclesis" was intended to be iridencleisis.

S. N. Key Jr., M.D., Austin, Texas.

RECTAL COMPLICATIONS OF EPISIOTOMY

To the Editor:—In the article on Rectal Complications of Episiotomy on page 1174 of The Journal, August 2, Marbury and Goldman do not state the type of episiotomy which was performed, but I judge that it was the old median episiotomy. It is only right to call the attention of the profession to the fact that a mediolateral episiotomy, or perineotomy, will avoid the dangers and complications which are portrayed in this article, since the incision avoids the close neighborhood of the rectum. Over many years I have never seen this type of perineotomy give any subsequent trouble. Instead of the incision being in the line between the posterior fourchette and the anus, it is made from the point a little to the right or left of the posterior fourchette and runs obliquely outward. While the occasional operator may find it advantageous to have his index finger in the rectum when putting in the sutures, this is unnecessary if the operator has had a modicum of experience, since he is far enough away from the rectum to avoid the danger of its perforation with the needle.

William R. Nicholson, M.D., Philadelphia.

IMMUNITY IN SYPHILIS

To the Editor:—With regard to your editorial "Immunity in Syphilis" (The Journal, August 23, p. 1485), may I call attention to my paper "Semantic Confusion and Resolution in the Concepts of Cure in Syphilis and of Reinfection With Syphilis," which was published in the *American Journal of Syphilis, Gonorrhea and Venereal Diseases* (30:344 [July] 1946). This article covers much the same ground as your editorial and appeared in point of time between the paper of Moore and that of Urbach and Beerman, which you cite. My interpretations of the clinical events of syphilis and of allergic and immunologic theory as related to the disease are somewhat different from those of the writers cited. It may be of interest to readers to examine this version together with the references given.

Morris Leider, M.D., Brooklyn.

Medical Motion Pictures

FILM REVIEWS

Transthoracic Resection for Carcinoma of the Cardiac End of the Stomach. Prepared in 1946 by Herbert R. Hawthorne, M.D., Graduate Hospital, University of Pennsylvania. 16 mm., color, silent, 650 feet (two reels). Showing time twenty-five minutes. Procurable on loan from the Author, University of Pennsylvania, 19th and Lombard streets, Philadelphia.

The author obtains exposure by resection of the eighth rib on the left, retraction of the lung and incision of the diaphragm. The lower end of the esophagus and upper portion of the stomach are mobilized and resected. The remaining portion of stomach is closed, with the formation of a tubular structure which is brought up to meet the end of the esophagus and an opening made in the stomach. Two inner rows of catgut and one outer row of interrupted silk are used for the anastomosis. The stomach is anchored to the parietal pleura to prevent traction on the suture line. The diaphragm is closed with interrupted silk around the upper portion of the gastric stump. The thorax is closed after insertion of a catheter leading down to a basin of water.

The photography in this film is good; exposure is adequate at all times to allow proper visualization of the operative procedure. The technic is good; the only criticism which might be offered is that the author might have used more gauze packs around the site of operation to minimize contamination.

Sterility, Its Causes, Investigation and Treatment. Prepared by Samuel L. Siegler, M.D. Produced in 1944 by the Bergman Association, New York. 16 mm., color, silent, 1,600 feet (one reel). Showing time fifty minutes. Procurable on loan from Samuel L. Siegler, M.D., 706 Eastern Parkway, Brooklyn.

This film presents a large amount of factual material related to the problem of sterility in men and women; the most valuable things in it are living pictures of various types of patients and some details of treatment. The important parts would probably make a film of one third the present length. The rest is largely an array of subtitles intended to make the film useful in teaching. This portion in its present form is so grossly defective as to spoil the film for any purpose whatever. It employs mystifying or undignified abbreviations like SDA, HP and TB, uses "hypospadia" as if it were the singular of "hypospadias," uses "media" for "medium," writes "azospermia" for "azoospermia," spells the name "Froehlich" several ways but always wrong, uses "cornua" as if it were the singular form, uses the phrase "Levi-Lorraine" as if everybody already knew what it meant (whereas it is not to be found in the twentieth edition of Dorland's Medical Dictionary) and is in general calculated to introduce confusion into some teacher's carefully organized course. Methods of treatment are named as having been "used" without indicating whether they were found salutary or ruinous. The age of the patient is essential in interpreting the case histories but is rarely given if ever; it is particularly important considering that the author recommends treatment for sterility if one year of married life has elapsed without conception and ignores what is now known about physiologic sterility of adolescence. It is doubtful whether many clinicians would speak so confidently about the advantages of vitamin E in human subjects, the value of the "implantation" operation, and the use of the potentiometer in detecting the time of ovulation.

The film certainly would prove confusing to an audience of American medical students.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Employer's Liability for Negligence of Its Medical Staff.—The plaintiff sued for damages alleged to have resulted directly from the failure of the defendant's medical staff to make a proper examination and diagnosis of his injuries. From a judgment in favor of the defendant the plaintiff appealed to the United States Circuit Court of Appeals, Fifth Circuit.

The defendant maintained a medical staff and clinic to which its employees were required to report whenever they were injured. While in the performance of his duties as a mechanic, the plaintiff sustained an injury to his back and, on notifying his foreman, was immediately directed to report to the clinic There he was examined by a member of the medical staff who was a physician and an employee of the defendant. The physician stated that, in his opinion, the injuries were not serious and directed the plaintiff to continue his work, which was of a heavy character; at that time, however, unknown to the plaintiff, his back was actually broken. Following the accident, plaintiff suffered excruciating pains in his back but, although he reported his suffering to the clinic, no x-rays were taken, notwithstanding plaintiff requested that this be done, and no effort was made to diagnose his injury properly and correctly, the same being dismissed as of no moment by the defendant's employees. Having a wife and child to support, and in reliance on the advice and direction of the defendant, the plaintiff continued to work although his broken back constantly caused him great pain and suffering. Knowing plaintiff's condition, insofar as the symptoms were concerned, the defendant in June 1943 directed him to carry a large and cumbersome bundle of metal from one place to another in the shop. While he was endeavoring to do so the weight shifted and the plaintiff was compelled to catch the bundle in an unbalanced position. Immediately he felt a stinging pain in his left groin. Thinking that he had ruptured himself, the plaintiff again reported to the clinic maintained by the defendant. No regular physician was present at the time, and he was seen by a first aid man who, on examination, stated that there was a lump in plaintiff's left side. He was later seen by a physician employed by the defendant who instructed him to return to work but to refrain from lifting any heavy loads for the time being. This physician advised the plaintiff that he was not ruptured and that in a few days he would have no further trouble with his groin. During all of this time, plaintiff suffered day and night from his back. Thereupon, plaintiff obtained a leave of absence and went to a hospital in Vicksburg, Miss., where a thorough examination immediately disclosed that his back was broken and that he was ruptured. He was promptly operated on for his rupture, and a brace was applied to his back.

The defendant contends that an employer is not liable for the erroneous diagnosis or negligent treatment of an employee's ailment by one of its physicians, where the employer was not negligent in selecting the physician and had no knowledge of his incompetence, such physician having a good reputation. Such a rule, said the court, is not absolute in Mississippi, although in some circumstances the master is not liable for the negligence or unskilfulness of a physician employed by him, provided he has exercised due care in selecting the physician. There was nothing in the complaint to warrant the inference in this case that the master employer undertook gratuitously to furnish the plaintiff medical assistance and was bound only to exercise reasonable care in the selection of the physician. On the contrary, it is reasonable to infer that the defendant established the clinic and employed the members of the medical staff for its own ends and purposes, thereby constituting the physician in charge his agent. Reporting to the clinic was not optional. The rules and regulations of the company, which plaintiff was instructed to obey, required him to report to a clinic in charge of a physician employed by the defendant. Not only that, the foreman specifically ordered him to report in this instance. He obeyed this order and was injured by the negligence of the physician in charge, who represented the defendant and was neither selected nor employed by the plaintiff. The fact that no charge was made against the plaintiff, or fee paid, for the doctor's services is not controlling. Every branch of a business need not be directly remunerative in order to warrant its maintenance for pecuniary reasons.

As to this physician and his treatment of plaintiff, the doctrine of respondeat superior applies. The defendant contends that the nature of the physician's vocation prohibits the application of this doctrine We know of no public policy against its application, said the court. Physicians and surgeons, in undertaking the duties of their profession, impliedly warrant that they are possessed of the requisite skill, learning and technical training to do the work required of them. The personal liability of the doctor must not be confused with that of his employer. The doctor's liability remains the same whether or not his employer also is liable. The principal is responsible for the tort of his agent, not because the former has done wrong, but because the law so declares as a matter of public policy. There is no more reason to except employers of physicians from the doctrine of respondeat superior than there is to except employers of other highly skilled persons who perform technical services requiring discretion. Whether the doctor was acting for any one other than himself when he committed the tort, and if so for whom, are questions of fact unless the facts are undisputed and conflicting reasonable inferences may not fairly be drawn theretrom. Accordingly the judgment in favor of the defendant was reversed and the cause remanded to the trial court for further proceedings.—*Knox v. Ingalls Shipbuilding Corporation, 158 F. (2d) 973 (1947).*

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

BOARDS OF MEDICAL EXAMINERS
BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Examinations of the boards of medical examiners and boards of examiners in the basic sciences were published in The Journal Sept. 20, page 181.

NATIONAL BOARD OF MEDICAL EXAMINERS

National Board of Medical Examiners: *Part III.* Durham, N. C., Oct. 21-23. Exec. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia 2.

EXAMINING BOARDS IN SPECIALTIES

American Board of Anesthesiology: Part II. *Oral.* Cleveland, Oct. 5-11. Sec., Dr. P. M. Wood, 745 Fifth Ave., New York 22.

American Board of Internal Medicine: *Oral.* Chicago, Oct. 8-10. Asst. Sec., Dr. W. A. Werrell, 1 West Main St., Madison 3.

American Board of Neurological Surgery: *Oral.* Chicago, May or June. Final date for filing application is Feb. 1. Sec., Dr. W. J. German, 310 Cedar St., New Haven, Conn.

American Board of Obstetrics and Gynecology: *Part I. Written.* Various Centers, Feb. 6. Final date for filing application is Nov. 1. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh 6.

American Board of Ophthalmology: Chicago, Oct. 6-12. Sec., Dr. S. Judd Beach, 704 Congress St., Portland, Me.

American Board of Orthopaedic Surgery: *Part I.* Applications are accepted for the next examination until Jan. 15, 1948.

American Board of Otolaryngology: Chicago, Oct. 7-11. Sec., Dr. D. M. Lierle, University Hospitals, Iowa City.

American Board of Pathology: *Oral and Written. All Groups.* Applications are accepted for the next examination until Oct. 1, 1947. Sec., Dr. Robert A. Moore, 507 Euclid Ave., St. Louis.

American Board of Pediatrics: Dallas, Dec. 5-7. Philadelphia, Jan 9-11. Sec., Dr. Lee F. Hill, 718 Royal Union Bldg., Des Moines 9.

American Board of Plastic Surgery: Examinations are given in April and November of each year in the home town of applicants. Sec., Dr. Robert H. Ivy, 1930 Chestnut St., Philadelphia.

American Board of Surgery: *Written.* Various Centers, March. Final date for filing application is Dec. 1. Sec., Dr. J. S. Rodman, 225 S. 15th St., Philadelphia 2.

American Board of Urology: Chicago, February. Final date for filing application is Nov. 1. Sec., Dr. Harry Culver, 1409 Willow St., Minneapolis 4.

Current Medical Literature

AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

Alabama State Medical Assn. Journal, Montgomery

16:405-472 (June) 1947

Early Characteristics of Certain Chronic Diseases. R. Fitz.—p. 405.
Cystic Disease of the Lung: Collective Review. S. W. Windham Jr. —p. 410.
Spinal Anesthesia: Recent Advances in Use of Spinal Anesthesia, with Special Reference to Use of Saddle Block in Obstetrics. J. K. Taggart Jr.—p. 425.

17:1-64 (July) 1947

Thiouracil and Propyl-Thiouracil. E. Drennen and S. A. Kahn.—p. 1.
Gynecologic Mortality: Clinicopathologic Analysis of 38 Cases. T. D. Efstation and H. Hyslop.—p. 4.
Procedure in Diagnosis of Anorectal Diseases. W. J. Rosser.—p. 9.

American Heart Journal, St. Louis

33:747-914 (June) 1947

Significance of Abnormally Small QRS Deflections in One or More Precordial Leads. A. W. Lapin.—p. 747
*Weight of Red Blood Corpuscles in Heart Failure Determined with Labeled Erythrocytes During and After Decompensation. G. Nylin and S. Hedlund.—p. 770.
Electrocardiograms with Large, Upright T Waves and Long QT Intervals. E. Byer, R. Ashman and L. A. Toth.—p 79
The Q_3 and QS_3 Deflections in the Electrocardiogram: Criteria and Significance. H. E. Ungerleider and R. Gubner.—p. 807.
Comparative Study of Intracavity Potential in Man and in Dog. D. S. Pallares, M. Vizcaino, J. Soberon and E. Cabrera.—p. 819.

Weight of Red Blood Corpuscles in Heart Failure Determined with Labeled Erythrocytes.—Nylin and Hedlund say that the Hevesy method for labeling blood corpuscles with radioactive phosphorus has contributed greatly to the study of different problems of circulation. One of the advantages of this method lies in the fact that the test substance maintains a constant activity in the blood for as long as one hour. The authors describe a variation of Hevesy's method which employs radioactivated whole blood. The blood corpuscles maintain their activity up to sixty minutes, while the activity of plasma falls to one tenth of its original value after five minutes. By the use of this procedure the quantity of blood corpuscles was estimated in 7 cardiac patients both in the stage of decompensation and after compensation had been restored. In decompensated cardiac patients there is an increase not only in the total quantity of blood and plasma but also in the amount of erythrocytes. After compensation is restored, both the plasma and blood corpuscles decrease in quantity. There is a difference in the quantity of blood corpuscles, measured in grams per kilogram of dry body weight (the weight of the body when there is no edema), in decompensated patients and in normal subjects. In decompensated patients the quantity of erythrocytes is, on the average, 36.4 Gm. per kilogram of dry body weight; in normal subjects this value is 31.2 Gm. About the same quantity of erythrocytes is found in compensated cardiac patients as in normal subjects. The authors stress the importance of a knowledge of the form of the dilution curve for the labeled blood corpuscles. Estimation of the circulation time by this method in cardiac patients with dilated hearts but no peripheral edema supports the view that blood is retained in dilated hearts and that this factor greatly influences the estimation of the circulation time.

American Journal of Psychiatry, New York

103:721-864 (May) 1947

Addiction: Theoretical Considerations as to Its Nature, Cause, Prevention and Treatment. J. D. Reichard.—p. 721.
Use of Aminophylline in Neuropsychiatric Disorders Associated with Cerebral Arteriosclerosis and Hypertensive Encephalopathy. H. H. Reese and F. Kant.—p. 731.
Psychiatric Syndromes in Patients with Organic Brain Disease: I. Diseases of Basal Ganglia. C. Brenner, A. P. Friedman and H. H. Merritt.—p. 733.
Effect of Anoxia as Measured by Electroencephalogram and Interaction Chronogram on Psychoneurotic Patients. J. E. Finesinger, E. Lindemann, Mary A. B. Brazier and E. D. Chapple.—p. 738.
Electroencephalographic Patterns from Base of Brain. M. Greenblatt, D. Funkenstein, D. Miller and M. Rinkel.—p. 749.
Study of Minnesota Multiphasic Personality Inventory in Clinical Practice: Notes on Cornell Index. H. C. Modlin.—p. 758.
Rorschach's Test as a Diagnostic Aid in Brain Injury. J. A. Aita, R. M. Reitan and Jane M. Ruth.—p. 770.
Situational and Attitudinal Influences on Rorschach Responses. A. S. Luchins.—p. 780.
Preliminary Test of Intelligence: Brief Test on Adult Intelligence Designed for Psychiatric Examiners. Margaret Keller, I. L. Child and F. C. Redlich.—p. 785.
Experimental Study of Mental Patients Through Autokinetic Phenomenon. A. C. Voth.—p. 793.
Brief Psychotherapeutic Interviews in Treatment of Epilepsy. O. Diethelm. —p. 806.
State Hospital School for Epileptic Children. R. L. Dixon.—p. 811.
Use of Residence in Psychiatric Treatment with Children. J. F. Robinson.—p. 814.
Institutional Treatment of Juvenile Delinquents. L. M. Dub.—p. 818.
Studies in Primary Behavior Disorders and Psychopathic Personality: II. The Inheritance of Electrocortical Activity. J. S. Gottlieb, M. C. Ashby and J. R. Knott.—p. 823.
Herpes Simplex and Second Degree Burn Induced Under Hypnosis. M. Ullman.—p. 828.
*Phobia as a Symptom in Hyperthyroidism. B. J. Ficarra and R. A. Nelson.—p. 831.

Phobia as Symptom of Hyperthyroidism.—Ficarra and Nelson studied 115 hyperthyroid patients from a psychologic point of view. The presence of phobias was the presenting symptom. The majority of patients with phobias were women. Eight men were found to have this complaint. In almost all patients the combination of thyroidectomy and intensive psychotherapy resulted in a disappearance of the phobia. This survey argues for an adequate history taking of patients suspected of possessing a phobia or presenting it as a major complaint. To label such persons as neurotic, neurasthenic or psychasthenic may be an injustice. Additional information, an adequate physical examination and laboratory studies should be made to rule out underlying thyroid disease.

Am. J. Roentgenol. & Rad. Therapy, Springfield, Ill.

57:653-790 (June) 1947

Radium Therapy of Hemangioendothelioma of Uterine Cervix. H. H. Bowling, R. E. Fricke and J. T. McClellan.—p. 653.
*Cancer of Cervix: Bellevue Hospital Method of Treatment Over a Period of Twenty-One Years. I. I. Kaplan and Rieva Rosh.—p. 659.
Intravaginal Radiation Therapy. J. S. Bouslog.—p. 665.
Use of Long Interstitial Radium Needles in Treatment of Cancer of Cervix. G. W. Waterman, R. DiLeone and E. Tracy.—p. 671.
*Radical Operation for Cancer of Cervix. J. V. Meigs.—p. 679.
Surgical Treatment of Cervical Cancer: Wertheim Operation: Pelvic Lymphadenectomy. D. G. Morton.—p. 685.
Carcinoma of Cervix: Applicator for Greater Parametrial Dosage. L. A. Campbell.—p. 697.
Efficient Deep Tumor Irradiation with Roentgen-Rays of Several Million Volts. J. G. Trump, C. R. Moster and R. W. Cloud.—p. 703.
Radium Dosage Calculator. E. W. Spencer and H. E. Johns.—p. 711.
Variations in Interlobar Fissures. E. M. Medlar.—p. 723.
Extramucosal Tumors Simulated by Gastric Carcinoma. R. M. Lowman, R. Shapiro and S. D. Kushlan.—p. 726.
Low-Back Pain Associated with Varices of the Epidural Veins Simulating Herniation of the Nucleus Pulposus. B. S. Epstein.—p. 736.
Ivory Vertebra Associated with Lipoma of the Spinal Cord: Case Report. S. L. Meltzer.—p. 741.
Relationship Between Tuberculosis and Osteochondritis Vertebrae (Calve). F. Leeser.—p. 744.
Pseudoneoplasm as Postappendectomy Finding. M. Malbin.—p. 750.

Cancer of Cervix.—Kaplan and Rosh review the therapeutic results achieved in patients with cervical cancer treated over a period of twenty-one years at Bellevue Hospital, New York. Of the 916 patients treated by the authors, 179 were alive five years or more and 60 ten years or more after treatment. Eight patients developed recurrence or metastases seven and eight years after treatment. Thirty-four whose condition was classified as hopeless, grade 4, were irradiated because of special request. One of these lived eight years and 8 lived four years. These favorable results in hopeless conditions induced the authors to make greater efforts with patients of this type. Treatment of 221 patients was not completed because the patients were lost sight of. In 36 cases other complicating conditions existed. In none of these did irradiation adversely influence the complicating disease. On the basis of their experience over twenty-one years the authors believe that irradiation is the best method of treating cervical cancer. It is the method of choice in all cases but those of stage 1. Even in stage 4 cases irradiation often prolongs life in comfort. The best form of irradiation is a combination of roentgen rays and radium, with roentgen therapy administered first unless persistent hemorrhage demands immediate cauterization of the bleeding area with radium.

Radical Operation for Cancer of Cervix.—Meigs insists that surgical treatment does not wish to compete with irradiation in cancer of the cervix. Irradiation is at present the method of choice and it has not been proved that the surgical treatment is as good or better. The interest in radical surgery is due to the fact that a few early cases do not respond well to irradiation. In these cases surgery may offer a cure. In the 91 cases in which operation has thus far been done the operative mortality has been zero; that is, in properly selected cases surgical treatment can be done with a mortality equal to that of radiation treatment. Most of the operations were done recently, so that few five year results are available. Six months to over five years have elapsed since the operation and about 11 per cent of the patients have died so far. The one great drawback of surgical treatment, the uterovaginal fistula, has been overcome. Positive lymph nodes, the great stumbling block in radiation treatment, may not be quite so serious in surgical treatment. Patients without positive lymph nodes who are carefully selected should do extremely well with surgical treatment. If a means could be found to establish radioresistance before treatment, the results of irradiation and surgery might be better in cancer of the cervix.

American Journal of Surgery, New York

74:1-114 (July) 1947

Lynch Operation for Carcinoma of the Rectosigmoid. J. M. Lynch and G. J. Hamilton.—p. 3.
*Carcinoma of the Thyroid Gland in Children. J. A. Rickles.—p. 8.
*Inguinal Hernia: Analysis of 2,643 Operations. A. D. Garner.—p. 14.
Fracture Fixation by Transarticular Pin: Technic for Control of Severe Ankle Fractures. M. J. Rowe and R. Sutherland.—p. 24.
Cholecystitis and Cholelithiasis in the Young. E. C. Heringman and D. W. Aiken.—p. 727.
Convulsions During Inhalation Anesthesia. T. L. Hyde and R. C. Schwegler.—p. 33.
The Underdeveloped Chin. L. W. Eisenstodt.—p. 39.
Topical Anesthesia; Effect on Tissue Regeneration. F. C. Combes, M. Reschke and Rose B. Saperstein.—p. 45.
Abdominal Symptoms in Sudden Acute Heart Conditions. M. A. Larkin.—p. 49.
*Use of Chemotherapy as Possible Means of Reducing Mortality Rate in Perforated Peptic Ulcer. J. W. Hirshfeld, W. E. Abbott and H. Smathers.—p. 54.
Anomalous Talocalcaneal Articulation: Cause for Limited Subtalar Movements. C. J. Sutro.—p. 64.
Sympathetic Nerve Block in Hypertension and Allied Cases. L. V. Lindroth.—p. 66.

Carcinoma of Thyroid in Children.—Rickles presents the histories of 4 children with carcinoma of the thyroid, who ranged in age between 6 and 11 years and who were observed in the course of only two years at the New Orleans Charity Hospital. The first patient is free from disease three years after undergoing only a simple excision of the adenoma which had been present most of her life. This emphasizes that the only difference between a benign and a malignant adenoma of the thyroid is the finding of the vascular invasion in the microscopic examination. The second and third cases are interesting because they concerned sisters; the tumors were practically identical microscopically, and both girls had evidence of hypothyroidism. All three were treated by surgery alone and none have yet shown evidence of recurrence. Case 4 illustrates the difficulty of making a clinical diagnosis of the diffuse type of cancer. Because of his laryngeal pathologic condition this child was carefully followed since the age of 2, and at no time did physical examination of the thyroid region give a hint of a pathologic disorder; the diagnosis was made only by microscopic examination of a metastatic node. His response to surgery and x-ray treatment was excellent and despite the metastases to the local nodes and parathyroid gland there is no evidence of recurrence at present.

Inguinal Hernia.—Garner says that a study of 2,040 patients in the U. S. Veterans Administration Hospital in Dayton, Ohio, operated on for 2,369 primary and 274 recurrent inguinal hernias indicates a trend toward the use of fascial sutures and fascial grafts in hernia repair operations. A concomitant drop in the recurrence rates of hernia apparently justifies this trend. Hernioplastic procedures are more difficult and more time consuming than are herniorrhaphies, but the incidence of cure is so much higher in the former that the additional time required appears to be well spent. There are no more complications following the use of fascia lata sutures and grafts than are encountered when silk sutures are used. The McArthur fascial suture hernioplasty has been almost entirely eliminated from the armamentarium of the author as a result of studies of recurrence rates. This operation is somewhat less effective than herniorrhaphy with silk sutures and decidedly inferior to the *Gallie fascial suture hernioplasty.* The Wangensteen pedicled fascia graft operation is reserved for patients with large defects in the fascia of the abdominal wall which cannot be adequately closed by procedures requiring less extensive dissection. Cooper's ligament offers a firm anchorage for the transversalis fascia and for the external oblique aponeurosis when exclusion of the femoral canal is necessary or when the inguinal ligament is absent or insufficiently strong to insure satisfactory inguinal reconstruction.

Chemotherapy in Perforated Peptic Ulcer.—According to Hirshfeld and his associates the operative mortality attending acute perforation of peptic ulcer is between 15 and 20 per cent. Approximately 80 per cent of the deaths are due to bacterial infection either intraperitoneal or pulmonary. Since most of the bacteria involved in these infections are susceptible to penicillin or streptomycin, it is believed that early and intensive treatment with penicillin and streptomycin of all patients with perforated peptic ulcer would reduce the mortality rate of this disease. Chemotherapy should be considered as an aid in the treatment and should not be substituted for careful surgical treatment or adequate preoperative and postoperative care.

American Review of Tuberculosis, New York

55:385-476 (May) 1947

Isolation and Identification of Pathogenic Fungi from Sputum: II. J. M. Kurung.—p. 385.
*Streptomycin and Lipotrophic Agents in Miliary Tuberculosis. A. C. Godward Jr.—p. 412.
*Streptomycin in Resection in Pulmonary Tuberculosis: Report of 5 Cases. R. P. Glover, O. T. Clagett and H. C. Hinshaw.—p. 418.
Streptomycin in Experimental Tuberculosis: In Vivo Sensitivity to Streptomycin of Recently Isolated Strains of Human Tubercle Bacilli and Strains of Bovine Tubercle Bacilli. W. H. Feldman and H. C. Hinshaw.—p. 428.
Frequency of Administration of Streptomycin: Influence on Results of Treatment of Tuberculosis in Guinea Pigs. W. H. Feldman, H. C. Hinshaw and A. G. Karlson.—p. 435.
Simultaneous Samples of Alveolar Air from Each Lung and Parts Thereof: Preliminary Report of a Method Using Bronchial Catheterization. Gösta Birath.—p. 444.
Pulmonary Tuberculosis Simulating Bronchogenic Carcinoma: Report of 4 Cases. A. R. Valle and M. L. White Jr.—p. 449.
Mitral Stenosis and Pulmonary Tuberculosis. E. Davis.—p. 457.
Extramedical Services in an Army Tuberculosis Hospital: Patient and Staff Personnel Orientation in an Army Tuberculosis Hospital. B. D. Daitz and M. Singer.—p. 459.
Tuberculosis and Pregnancy. E. Bridge.—p. 471.

Streptomycin and Lipotrophic Agents in Miliary Tuberculosis.—Godward reports that a patient with proved miliary tuberculosis recovered completely following treatment with streptomycin and lipotrophic agents. The patient received 0.2 Gm. (200,000 units) of streptomycin intramuscularly every three hours, or 1.6 Gm. daily. In addition, he was given 5 Gm. of lipotrophic agents (3 Gm. of methionine, 2 Gm. of choline chloride) a day. The methionine was given in the form of amigen intravenously in the early phase of therapy and orally after foods were tolerated. The choline was given orally. This treatment was given for six months, during which time he received approximately 295 Gm. of streptomycin and 650 Gm.

of the lipotrophic agents. No toxic reactions were encountered during the course of therapy. The apparent recovery of this patient can most likely be attributed to the effect of streptomycin.

Streptomycin in Resection in Pulmonary Tuberculosis.—Glover and his co-workers suggest that streptomycin may well be effective in exerting its stabilizing influence in the preoperative and postoperative period in patients with pulmonary tuberculosis who are operated on in order to prevent the spread of the tuberculous process or to protect areas newly exposed as the result of trauma and manipulation. They present the histories of 5 patients in whom lobectomy or pneumonectomy was combined with streptomycin therapy. They think that the results in these 5 consecutive cases are sufficiently encouraging to warrant the continued trial of combined surgical and antibiotic treatment. While the series is not sufficient to indicate clearly that any prophylactic or therapeutic effect was realized, it is intended to indicate the possibility of utilizing the suppressive effect of streptomycin during the crucial period before, during and after radical surgery. Should streptomycin be successful in preventing bronchogenic and hematogenous extension of pulmonary tuberculosis during and after operation or should it prevent development of such a complication as tuberculous empyema it will reduce surgical mortality and broaden the indications for radical surgical treatment of pulmonary tuberculosis.

Archives of Internal Medicine, Chicago

79:589-694 (June) 1947

*Cerebral Manifestations of Acute Rheumatic Fever. H. A. Warren and J. Chornyak.—p. 589.
*Test for Quantitative Vibratory Sensation in Diabetes, Pernicious Anemia and Tabes Dorsalis: Diagnostic and Prognostic Value. J. H. Barach.—p. 602.
*Transitory Diabetic Syndrome Associated with Meningococcic Meningitis. M. J. Fox, J. F. Kuzma and W. T. Washam.—p. 614.
Infectious Hepatitis: Report of an Outbreak, Apparently Water Borne. F. F. Harrison.—p. 622.
An Unusual Pulmonary Disease. J. C. Cain E. J. Devins and J. E. Downing.—p. 626.
Gastroenterology: Review of Literature from July 1945 to July 1946. W. L. Palmer, J. B. Kirsner, W. E. Ricketts and others.—p. 642.

Cerebral Manifestations of Acute Rheumatic Fever.—Warren and Chornyak point out that, whereas Sydenham's chorea is accepted as a rheumatic equivalent and the cause of a variety of behavior disorders, it is not so well known that acute rheumatic fever may produce severe mental changes of a different character and without the motor phenomena typical of Sydenham's chorea. One case of rheumatic encephalitis is reported in which there were decided mental changes, with apparent recovery. Four other cases are presented in which cerebral involvement due to acute rheumatic fever seemed probable. The patients with cerebral manifestations were observed among 207 patients with rheumatic fever in an army post. Acute cerebral reactions occur during the course of rheumatic fever and may constitute a serious problem in treatment and prognosis. The mental symptoms may occur as the presenting picture and with little or no arthritic manifestations. They may precede the arthritic symptoms or they may follow them. Usually the reaction indicates a diffuse involvement of the brain and there are minimal, if any, localizing signs. One patient showed only a localized lesion. There was complete clearing in several days, with no residual paralysis. Rheumatic encephalitis may present a bizarre picture, with hallucinations, phobias and acute panic-like episodes. Delirium, restlessness and even convulsions may appear. In some cases a masklike facies, mental retardation and sleeplessness may be the only symptoms of cerebral involvement. Hyperpyrexia may be a serious complication.

Quantitative Vibratory Sensation in Diabetes, Anemia and Tabes.—According to Barach, vibratory sensation is induced by placing the vibrating tuning fork on one of the bony prominences of the body, from which the vibratory sense is transmitted along sensory paths leading to the cord and brain. The author and his associates use the 13 inch tuning fork of Symns. They have made numerous observations on the vibratory sensation in cases of diabetes mellitus, pernicious anemia and syphilis of the central nervous system for a period of twenty years. Study of the vibratory sensation as estimated with the tuning fork is a clinical method of diagnostic and prognostic value. Vibratory sensation is largely independent of tactile sensation and depends on the transmission of vibratory sense through muscle, bone and joints to the peripheral nerves, posterior roots and posterior columns of the spinal cord to the brain. A normal curve, based on the number of seconds duration of the vibratory sense as induced by a vibrating tuning fork, has been established. There is a decided loss of vibratory sensation in certain diseases, notably diabetes mellitus, pernicious anemia and tabes dorsalis. Not only is this curve of confirmatory diagnostic value as to the existence of these diseases, but the rise or fall of the curve occurs simultaneously with improvement or aggravation of the disease, thus becoming of prognostic value. Notable deviations below the normal throw additional light on the need for intensive treatment.

Transitory Diabetic Syndrome with Meningococcic Meningitis.—Observations at the South View Isolation Hospital in Milwaukee convinced Fox and his associates that a transient diabetic syndrome exists in a high proportion of patients with meningococcic meningitis. Among 233 such patients they detected 58, a fourth of the total, who had the transitory diabetic syndrome. Unless this high frequency is realized, there is likely to be a high percentage of mistaken diagnoses. In 5 of the 58 patients the detection of sugar and acetone in the urine and treatment of diabetic acidosis impeded the diagnosis of meningococcic meningitis. The delay incurred while the diabetic acidosis alone is treated is extremely significant in the swift advance of the pathologic change to a state of irreversibility. Therefore in all cases of coma extensive examination and diagnostic procedures, such as lumbar puncture, must be instituted as a routine measure.

Archives of Otolaryngology, Chicago

45:613-740 (June) 1947

*Labyrinthine Symptoms Subsequent to Fenestration of Labyrinth. H. Brunner and M. H. Cutler.—p. 613.
Histogenesis of Corpora Amylacea of Cochlear Aqueduct, the Internal Auditory Meatus and the Associated Cranial Nerves. J. G. Waltner.—p. 619.
Severe Purulent Inflammation of the Upper Respiratory Tract Caused by Neisseria Intracellularis. L. Veazie and H. J. Sears.—p. 632.
Early Treatment of Maxillofacial Battle Casualties: Résumé of 421 Cases. J. E. Alexander.—p. 637.
Modified Endaural Incision with Nerve Block Anesthesia for Fenestration and Mastoidectomy. C. F. Whitaker Jr., A. L. Juers and G. E. Shambaugh Jr.—p. 662.
Maxillofacial Fractures: 157 Cases; Experiences with a Hospital in Casablanca, Oran and Marseille. M. N. Young.—p. 668.
Aural Scotomas Produced by Gunfire: Study of Audiometric Curves of Traumatic Deafness. Beverly A. Cope and H. B. Johnson.—p. 676.
Chronic Progressive Deafness, Including Otosclerosis and Diseases of the Inner Ear: Review of the Literature for 1944 and 1945. G. E. Shambaugh Jr. and A. L. Juers.—p. 697.

Labyrinthine Symptoms Subsequent to Fenestration.—Brunner and Cutler studied the spontaneous labyrinthine symptoms which are noticed immediately after the fenestration, also the fistula test. Since fenestration creates a fistula in the bony walls of the labyrinth, the operation offers a chance to study labyrinthine symptoms in man under circumstances which in the past could be produced only by experiments on animals. Studies were made on 12 patients undergoing fenestration. It was found that twenty-four hours after fenestration of the labyrinth there is horizontal and rotatory nystagmus of the third degree to the side of the fenestration, which disappears in three to four days, while after surgical injury of the horizontal semicircular canal there is horizontal and rotatory nystagmus of the third degree to the other side, which persists for two to four weeks. If after fenestration of the labyrinth the nystagmus is directed toward the side of the fenestration and decreases in a few days, it is caused by the opening of the perilymphatic space. If the nystagmus is directed toward the other side, or if it continues for more than one week, an infection of the fenestra is likely to occur. Slow oscillatory movements of the eyes and nystagmus of the head do not indicate an infection of the fenestra. After fenestration of the labyrinth the fistula test should be performed with the Politzer bag and not with the cotton applicator. Atypical findings with the fistula test do not necessarily depend on inflammatory changes in the perilymphatic space.

Archives of Physical Medicine, Chicago

28:327-418 (June) 1947

Physical Medicine and Rehabilitation in the Veterans Administration. D. A. Covalt.—p. 327.
*Effects of Diathermy on Tissues Contiguous to Implanted Surgical Metals. H. S. Etter, R. H. Pudenz and I. Gersh.—p. 333.
Effect of Presence of Metals in Tissues Subjected to Diathermy Treatment. K. S. Lion.—p. 345.
Physical Medicine and Cold Injury of the Limbs. I. D. Stein.—p. 348.
Frostbite: Experimental and Clinical Observations. C. A. Johnson. —p. 351.
Factors to Be Considered in Evaluating Effect of Treatment in Anterior Poliomyelitis: Special Reference to Improvement in Muscle Strength. N. Nelson.—p. 358.

Effects of Diathermy on Tissues Contiguous to Implanted Metals.—According to Etter and his associates the potential danger of short wave diathermy in patients with metals embedded in their tissues has been a subject of much discussion by physiatrists. The danger allegedly arises from the possibility that the diathermy, even in therapeutic dosage, might either heat the metals to temperature sufficiently high to injure contiguous tissues or distort and concentrate the field immediately surrounding the metal. The importance of the problem has increased considerably since the war. In addition to the enormous number of patients with retained shrapnel and other missile fragments, an increasing number of casualties are being treated by permanent or temporary implantation of metals in tissue. Although diathermy is not commonly administered over the brain, its use in the treatment of sinus infections and cerebral vascular disorders might expose metal skull plates to the short wave field. The authors applied short wave diathermy to the tissues of experimental animals in which tantalum and silver plates, foil and wire and stainless steel plates were embedded. The metals were wrapped around the sciatic nerves or inserted into intramuscular or subcutaneous pouches or fitted into skull defects over the intact dura. There was no significant difference between the temperature on the side containing the metal and that on the control side, irrespective of the diathermy machine used, the method of application of the short wave energy or the nature of the metal used. Microscopic examination of tissues contiguous to the metals disclosed no significant destructive effects from diathermy attributable to the presence of the metal.

Bulletin of Los Angeles Neurological Society

12:1-78 (March) 1947

Some Reminiscences of S. R. Cajal: Farewell Tribute. J. M. Sanchez-Perez.—p. 1.
Notes on Pathology of Cranial Tumors: 4. Hyperostoses—Primary, Secondary and Neoplastic. C. B. Courville.—p. 6.
*Extensive Symmetrical Cerebral Calcification and Chorioretinitis in Identical Twins (Toxoplasmosis?): Clinical Report of Cases. K. H. Abbott and J. D. Camp.—p. 38.
Amnesia for the Left Limbs Developing Into Anosognosia: Report of Case. S. Cobb.—p. 48.
*Complete Removal of Craniopharyngioma with Recovery from Blindness. W. T. Grant.—p. 53.
Bilateral Palmar Atrophy Due to Cervical Cord Trauma: Report of Case. C. W. Irish.—p. 59.
Meningioma en Plaque: Report of Case. G. N. Thompson.—p. 64.
Adhesive Spinal Arachnoiditis: Short Review. P. M. Rocovich.—p. 69.

Extensive Symmetrical Cerebral Calcification and Chorioretinitis in Identical Twins (Toxoplasmosis?).—Abbott and Camp report observations on twin boys aged 11 years who were brought to the Mayo Clinic because of visual disturbances and of disturbances of movement in the right extremities. The disturbances were more evident in the more severely affected of the two boys, who also had bilaterally symmetrical, extensive, dense calcification in the cerebrum with minor involvement of the cerebellum. Both patients had extensive chorioretinitis, which was more severe unilaterally, associated with retinal angiomatosis. Blood serum from each of the twins neutralized toxoplasma organisms. The pathogenesis and the histopathology of this syndrome, symmetrical cerebral calcification, chorioretinitis with retinal angiomatosis and toxoplasmosis, is unknown. Although a degenerative process occurring in symmetrical anomalies of vascular or heterotopic nervous tissue or both may be the causal factor, it would seem more plausible that the syndrome is due to inflammation, probably consequent to chronic toxoplasmosis.

Complete Removal of Craniopharyngioma with Recovery from Blindness.—Grant was unable to find the report of a case of total removal of a suprasellar cyst or craniopharyngioma. He presents such a case. A boy aged 2 years was apparently well until he fell on his forehead. Failing vision began in four days, and the boy was totally blind in twelve days. At operation, four weeks and two days after the onset of blindness, a large suprasellar cystic tumor was collapsed by aspiration and removed intact. It was necessary to divide the right optic nerve to accomplish this. A narrow stalk connected the base of the tumor with the pituitary fossa. Response of the left pupil to light was present two days after operation and the patient was able to see on the seventh day. He now has useful vision. The history suggested strongly that trauma has been a factor in causing blindness. Cushing observed that the history of preceding trauma was surprisingly common as an apparent factor that stirs suprasellar cysts into activity. The absence of blood pigment in the cyst wall and of red blood cells in the cyst fluid would be against the contention that an intracystic hemorrhage had occurred at the time of the blow on the head. When the patient fell on his right forehead one would expect that the tumor would be thrust forward temporarily at the moment of the impact. This could hardly damage the optic nerves without causing visual impairment at once. But it could tear arachnoidal or other bands of tissue that were constricting the tumor. This would allow the lesion to expand gradually after the injury and would seem to fit the train of events in the present case.

Bull. of U. S. Army Med. Dept., Washington, D. C.

7:493-572 (June) 1947

Development of Physical Medicine as Observed During the Past Two Decades. F. H. Krusen.—p. 563.

7:573-654 (July) 1947

Developments in Military Medicine During Administration of Surgeon General Norman T. Kirk.—p. 594.
Serodiagnosis of Amebiasis. J. F. Kent.—p. 647.
Precipitation of Sodium Penicillin Solutions. D. L. Buckles.—p. 648.
Apparatus for Diluting Penicillin. M. A. Walker and D. C. Moore. —p. 649.
DDT Sprayers. G. W. Stocking and T. S. Medley.—p. 650.

California Medicine, San Francisco

67:1-68 (July) 1947

Physiologic and Surgical Considerations in Treatment of Duodenal Ulcers. J. T. Priestley.—p. 1.
Use and Abuse of Desiccated Thyroid. E. K. Shelton.—p. 9.
*Rh and Hr Factors. M. L. Hunt and S. P. Lucia.—p. 14.
Excretory Cystograms After Voiding. J. R. Dillon.—p. 17.
Management of Cardiospasm. R. Schindler.—p. 23.
California's Plan for Study and Control of Mosquito Borne Diseases. L. Breslow and A. Dahl.—p. 28.
Some Features of Psychiatric Practice in Postwar Medical Care Planning. H. E. Chamberlain.—p. 31.
Official Medical Investigation of Deaths in Behalf of Public Welfare. A. R. Moritz.—p. 33.
Parenteral Fluid Therapy During Prolonged Surgery. G. C. Langsdorf. —p. 35.
Ancient Chinese Surgery: Acupuncture. A. Fields.—p. 39.
Dicumarol. D. W. Petit and C. J. Berne.—p. 40.

Rh and Hr Factors.—Hunt and Lucia say that the presence of any Rh antibodies, either agglutinating or blocking, indicates sensitization of the host with Rh positive erythrocytes either from a blood transfusion or from a current or previous pregnancy. If antibodies are found during the first few months of pregnancy and increase as the pregnancy progresses they may indicate (*a*) a rise of antibodies initially formed in the past and bearing no relation to the Rh characteristic of the fetus in utero; in such an instance the infant would be unaffected; (*b*) an Rh positive fetus producing specific sensitization of the mother; in such an instance the infant might be afflicted with hemolytic disease. If antibodies occur only within the last few weeks of pregnancy they may indicate initial sensitization in a mother not previously exposed to the Rh factor; in such an instance the infant might show mild symptoms of hemolytic disease of the newborn or be clinically normal. About 10 per cent of the mothers of infants with hemolytic disease have no evidence of Rh sensitization. In these cases the disease is due to the A-B-O and Hr sensitization and other mechanisms. On the other hand, a clinically normal Rh positive child may be born to an Rh negative mother who shows abundant evidence of current Rh sensitization.

Journal of Clin. Endocrinology, Springfield, Ill.

7:171-234 (March) 1947

Constitutional Type of Precocious Puberty. A. M. Hain.—p. 171.
Evaluation of Urethral Smear as Index of Androgenic Deficiency in Male. E. J. Cohen.—p. 186.
Effects of Steroid Hormones on Developmental Separation of Prepuce from the Glans Penis. L. J. Wells and C. J. Lund.—p. 192.
*Excretion of 17-Ketosteroids in Ankylosing Spondylarthritis and in Rheumatoid Arthritis: Preliminary Report. R. A. Davison, P. Koets and W. C. Kuzell.—p. 201.
*Insulin Regulation in 126 Diabetic Children. H. O. Mosenthal and A. P. Rosen.—p. 205.
Thyrotoxicosis Complicated by Severe Iodism: Preparation for Surgery with Propyl-Thiouracil. E. A. Newman and P. H. Ross.—p. 212.

Excretion of 17-Ketosteroids in Ankylosing Spondylarthritis.—Davison and his associates found that the urinary excretion of 17-ketosteroids in 13 male patients with ankylosing spondylarthritis (Marie-Strümpell type) averaged 27.3 mg. in twenty-four hours as compared with an average of 14 mg. for normal males. In 11 females with rheumatoid arthritis the average urinary excretion of 17-ketosteroids was 12.8 mg. as compared with an average value of 10 mg. for normal females. Thus there seems to be a trend to greater excretion of 17-ketosteroids in ankylosing spondylarthritis, a disease largely confined to males, whereas, in typical polyarticular rheumatoid arthritis in females this tendency is not demonstrated.

Insulin Regulation in 126 Diabetic Children.—Mosenthal and Rosen observed the insulin regulation of 126 children at a summer camp for diabetic children during July and August 1946. Three types of insulin were used: regular insulin, protamine zinc insulin and globin insulin with zinc. Only protamine zinc insulin and globin insulin with zinc were satisfactory when given as the sole insulin, while regular insulin was a distinct failure in many instances. Protamine zinc insulin and regular insulin by separate injections had to be replaced by other forms of insulin in many cases. Besides the disadvantage of a double injection, this form of insulin therapy proved less satisfactory than the insulin mixtures made in one syringe. Mixtures of protamine zinc insulin and regular insulin prepared in one syringe proved effective. Where insulin changes were believed advisable, the routine switch was made to a mixture of 1 part of protamine zinc insulin to 2 parts of regular insulin advocated by Colwell as the most generally applicable insulin. The authors believe that globin insulin with zinc would have yielded equally good results. Although the idea that protamine zinc insulin should not exceed the amount of regular insulin in one syringe mixtures is prevalent, it was shown that protamine zinc insulin was often greater in amount than regular insulin for optimal results.

7:235-306 (April) 1947

*Radio Iodine: Its Use as Tool in Study of Thyroid Physiology. R. W. Rawson and J. W. McArthur.—p. 235.
Effect of Trauma and Disease on Urinary 17-Ketosteroid Excretion in Man. A. P. Forbes, E. C. Donaldson, E. C. Reifenstein Jr. and F. Albright.—p. 264.
Diagnosis of Hydatidiform Mole by Gonadotropic Hormone Assay Using South African Frog Xenopus Levis. A. I. Weisman and C. W. Coates.—p. 289.
Male Hypogonadism Treated by Sublingual Methyltestosterone. R. S. Finkler.—p. 293.

Radio Iodine as a Tool in the Study of Thyroid Physiology.—Rawson and McArthur point out that the study of thyroid physiology with radioactive isotopes of iodine was started in 1937. They review the collection of iodine by the thyroid and the effect of the thyrotropic hormone, studies on the chemical transformation of administered radioactive iodine, the effect of certain thyroid inhibitors on the metabolism of iodine, the use of radio iodine in the study of human thyroid disease, the treatment of hyperthyroidism with radioactive iodine and the collection of radioactive iodine by thyroid tumors. They maintain that radioactive iodine in thyroid cancer will be possible only in exceptional cases unless means can be found to increase the avidity of thyroid tumors for iodine. It has proved a valuable tool for the study of thyroid physiology. Certain principles of thyroid function which were demonstrated with the classic biochemical technic have been reinforced and amplified. Progress toward the solution of the steps involved in the synthesis of the natural thyroid hormone has been facilitated. The mode of action of certain goitrogenic thyroid-inhibiting agents has been clarified. Knowledge of iodine metabolism in hyperthyroidism has been advanced and some correlation has been demonstrated between the structure and the function of benign and malignant tumors of the thyroid. In adequate dosage radioactive iodine has proved to be a therapeutic agent of value in certain selected cases of hyperthyroidism and in exceptional instances of thyroid cancer.

Journal of Nervous and Mental Disease, New York

105:571-700 (June) 1947

Effect of Surging Currents of Low Frequency in Man on Atrophy of Denervated Muscles. C. T. Liu and F. H. Lewey.—p. 571.
Observations on Personality Changes After Leukotomy. F. Reitman.—p. 582.
Variable Tolerance for Alcohol. A. M. Meerloo.—p. 590.
The Sleeping and Waking Mechanisms: Theory of Depressions and Treatment. A. Myerson.—p. 598.
Depressive Reactions in a General Hospital: Study of 150 Cases. H. S. Ripley.—p. 607.
Vasomotor Factor in Hypoglycemia. J. A. Sindell.—p. 616.
Disorientation of Body Image. J. D. Teicher.—p. 619.
*Use of Electroshock Therapy in Psychiatric Illness Complicated by Pulmonary Tuberculosis: Report of a Case. O. A. Will Jr. and A. M. Duval.—p. 637.
Adjustment Problems of Selected Negro Soldiers. J. D. Frank.—p. 647.
Treatment of Epilepsy with Tridione. L. J. Robinson.—p. 661.

Electroshock in Psychiatric Illness Complicated by Pulmonary Tuberculosis.—Will reports the experience of a man aged 21 in whom an apparently latent pulmonary lesion (considered to be tuberculosis but not confirmed by the finding of bacilli) became activated shortly after the completion of a series of eight electroshock treatments. It is possible that the convulsive therapy played an important role in this activation. The spread of the tuberculous process may be encouraged by the development of scattered petechial pulmonary hemorrhages resulting from the violence of the seizure. The use of curare to control the convulsive movements and thus reduce the incidence of such hemorrhages might be helpful in treating cases complicated by pulmonary tuberculosis. Electroshock in patients with latent or active pulmonary tuberculosis may be attended with some risk, although pulmonary tuberculosis is not a definite contraindication to such therapy. Each case should be evaluated individually.

Journal of Nutrition, Philadelphia

34:1-128 (July) 1947. Partial Index

Cytochemical Study of Responses of Adrenal Cortex of Rat to Thiamine, Riboflavin and Pyridoxine Deficiencies. Helen W. Deane and J. H. Shaw.—p. 1.
Further Studies of Manganese Deficiency in the Rabbit. G. H. Ellis, S. E. Smith and Elizabeth M. Gates.—p. 21.
Studies of the Manganese Requirement of Rabbits. S. E. Smith and G. H. Ellis.—p. 33.
*Supplemental Relationship Between Pork Protein and Egg Protein. R. Hoagland, N. R. Ellis, O. G. Hankins and G. G. Snider.—p. 43.
Riboflavin Excretions and Test Dose Returns of Young Women During Periods of Positive and Negative Nitrogen Balance. H. Oldham, Elizabeth Lounds and T. Porter.—p. 69.
*Growth and Longevity of Rats Fed Omnivorous and Vegetarian Diets. A. J. Carlson and F. Hoelzel.—p. 81.
Is Cobalt a Dietary Essential for the Rabbit? J. F. Thompson and G. H. Ellis.—p. 121.

Supplemental Relationship Between Pork and Egg Proteins.—According to Hoagland and his co-workers the supplemental relationship of the protein in one food product to that in another is of great practical importance in human nutrition. In 1945 they reported that pork protein had a decided supplemental relationship to bread protein, and the question then arose as to the possibility of a similar relationship between pork protein and egg protein. The authors determined the supplemental relationship between the protein in pork and that in eggs by experiments with young male albino rats. The protein in both fresh and cured hams contained insufficient cystine and methionine for optimum growth in rats when the diets contained 10 per cent of protein; but when pork protein was supplemented with these amino acids, the growth promoting value was equal to that of protein in eggs. There was found to be a moderate supplemental relationship between the protein in ham and that in eggs. Mixtures of equal parts of pork and egg protein had approximately the same growth promoting value as egg protein alone.

Growth and Longevity with Omnivorous and Vegetarian Diets.—Comparative studies of the effects of omnivorous and purely vegetarian diets on the growth and longevity of rats seemed of interest to Carlson and Hoelzel in view of the fact that the increasing population of the world tends to compel the use of a larger proportion of foods of vegetable origin in the human diet and the view is widely held that a vegetarian diet promotes health and longevity. The authors describe the growth of rats fed omnivorous and vegetarian diets during two longevity studies and during additional short term studies. Two of 9 male Wistar rats attained weights of 870 and 890 Gm. respectively on an omnivorous diet including about 35 per cent protein (chiefly meat protein) and 28 per cent fat. Rats fed purely vegetarian diets were stunted in growth. Rats fed an omnivorous diet lived significantly longer than rats fed a vegetarian diet. The life span was more uniformly prolonged by the intermittent fasting of rats fed an omnivorous diet than in rats fed a vegetarian diet.

Laryngoscope, St. Louis

57:367-422 (June) 1947

*The Fenestration Operation: Observations on Evaluation of Hearing Tests. J. R. Lindsay.—p. 367.
Chronic Allergic Sinusitis: Perennial Nasal Allergy. A. G. Rawlins.—p. 381.
Case of Esophageal Foreign Body with Mediastinitis and Other Complications. E. H. Lyman.—p. 400.
Classification of Carcinoma of the Larynx. T. E. Walsh.—p. 414.
Report on 2 Unusual Cases Involving Foreign Bodies. J. I. Kemler.—p. 419.

Fenestration Operation:—Lindsay points out that the estimated percentage of successes and failures of the Lempert nov-ovalis fenestration operation has varied, but the basic fact has been established that satisfactory results may be achieved in a sufficiently high percentage to warrant the operation in suitable cases. A statement of the percentage of good results falls short of giving a complete picture. There are varying degrees of success, and although the hearing may be improved above the 30 decibel average threshold for speech frequencies and be generally satisfactory to the patient, many of these operations must be considered as only partly successful in that the maximum postoperative gain may not have been maintained or may never have been reached. The author concludes that mplete closure of the fenestra after the Lempert nov-ovalis eration has become an infrequent complication. A decrease the hearing improvement for low frequency in the third to sixth month is common and is evident in many cases which may still be classed as successful results. Hearing for the 2,048 and 4,096 region is most consistently maintained after operation. This region is most important for speech perception. A comparison between preoperative bone conduction thresholds and the maximum postoperative hearing gain has shown a close correlation. The possibility for improvement in speech perception appears to be most accurately indicated by the preoperative bone conduction threshold values at 2,048 and 1,024 cycles.

Missouri State Medical Assn. Journal, St. Louis

44:385-464 (June) 1947

SYMPOSIUM ON MEDICOLEGAL PROBLEMS

Joint Tasks of Law and Medicine. H. W. Smith.—p. 403.
Survey of Laws of Missouri Relating to Practice of Medicine. H. S. Breyfogle and A. J. Willmann.—p. 404.
Legal Considerations of Blood Alcohol Analysis. C. E. Cullen.—p. 410.
Coroner Proceedings in Relation to Workmen's Compensation Hearings. C. S. Goodman.—p. 413.
Legal Considerations Incident to Performance of Autopsies by Coroners and Pathologists in Missouri. S. D. Flanagan.—p. 418.
Medicolegal Aspects of Sale and Use of Barbiturates. R. S. Pruitt.—p. 419.
Medicolegal *Problems in Distinguishing* Accident from Suicide, with Special Reference to Missouri Cases. H. S. Breyfogle and O. Richardson.—p. 423.

44:467-552 (July) 1947

Contact Dermatitis: Simplification of Therapy and of Search for Causes. R. L. Sutton Jr.—p. 481.
Traumatic Rupture of the Intestine. R. Berg.—p. 484.

New England Journal of Medicine, Boston

236:965-996 (June 26) 1947

Surgical Treatment of Urinary Incontinence. M. K. Bartlett.—p. 965.
Infection Caused by Streptobacillus Moniliformis: Report of 2 Cases Following Rat Bites. L. Kilham.—p. 969.
Surgical Treatment of Degenerative Arthritis of the Knee Joint. G. E. Haggart.—p. 971.
Favism: Short Review and Report of a Case. H. J. Wharton and W. Duesselmann.—p. 974.
Rubella (German Measles). C. Wesselhoeft.—p. 978.
Brain Abscess.—p. 989.
Metastatic Adenocarcinoma of Lymph Nodes Around Bile Ducts from Previously Resected Adenocarcinoma of Rectum.—p. 992.

New Jersey Medical Society Journal, Trenton

44:253-300 (July) 1947

*Etiology of Scleroderma: Preliminary Clinical Report. Virginia Wuerthele-Caspe, Eva Brodkin and Camille Mermod.—p. 256.
Brief Psychotherapy. E. Baker.—p. 260.
Ramsey Hunt Syndrome with Thoracic Herpes (Without Auricular Eruption). W. A. Leff.—p. 262.
Workmen's Compensation and the General Practitioner. W. K. Harryman.—p. 265.

Etiology of Scleroderma.—Wuerthele-Caspe and her associates had reason to suspect a bacterial origin of scleroderma. On the supposition that the organism is a mycobacterium as in leprosy and tuberculosis, it was reasoned that it should be found in nasal ulcers, subcutaneous tissue and sputum when there is pulmonary involvement. Material was prepared from the sputum of a proved case of scleroderma. When the slides were stained by the Ziehl-Neelson method, numerous short, thick, acid-fast rods were seen. Subsequently the differential triple stain technic of Alexander-Jackson was employed and a team of investigators was formed to identify the organism. Five case histories are presented to demonstrate the results of these studies. The organism has been found in the sputum, in the blood and in nasal and subcutaneous tissue smears and has been grown in pure culture from the blood. All patients treated with promin (which destroys or inhibits mycobacteria) have shown responsive changes. The organism has been tentatively named Sclerobacillus Wuerthele-Caspe and may be a new member of the family of mycobacteria. Further studies are in progress.

Philippine Medical Association Journal, Manila

23:1-38 (Jan.) 1947

Early Diagnosis of Cancer of the Uterus. C. P. Manahan.—p. 1.
Occiput Posterior Positions and Dystocia. J. Villanueva.—p. 5.
Study of Functional State of Reticuloendothelial System Among Filipinos: Special Reference to Cancer Patients. F. Bocobo and R. Willheim.—p. 9.
Benign Giant Cell Tumor of Bone: Report of a Case Treated by X-Ray Radiation 5 Years Ago. P. S. Chikiamco.—p. 19.
Results of Brief Schistosomiasis Survey Around Lake Mainit, Mindanao. T. P. Pesigan.—p. 23.

Psychiatry, Washington, D. C.

10:121-238 (May) 1947

Therapeutic Investigations in Schizophrenia. H. S. Sullivan.—p. 121.
Suggested Specificity of Certain Dynamisms in Case of Schizophrenia. H. Staveren.—p. 127.
Management of Paranoid Trends in Treatment of a Postpsychotic Obsessional Condition. Sarah S. Tower.—p. 137.
Management of Anxiety in a Case of Paranoid Schizophrenia. R. A. Cohen.—p. 143.
Onset in Acute Schizophrenia. A. T. Boisen.—p. 159.
Certain Primary Sources and Patterns of Aggression in the Social Structure of the Western World. T. Parsons.—p. 167.
Changing Concepts of Homosexuality in Psychoanalysis. Clara Thompson.—p. 183.
Medical Philosophy: From Viewpoint of Psychiatrist. W. A. White.—p. 191.

Psychoanalytic Quarterly, Albany, N. Y.

16:151-302 (April) 1947

Observations of a Training Analyst. H. Sachs.—p. 157.
Psychoanalysis and Nonanalytic Psychotherapy. J. D. Benjamin.—p. 169.
Vision, Headache and the Halo: Reactions to Stress in the Course of Superego Formation. Phyllis Greenacre.—p. 177.
Analysis of Postural Behavior. F. Deutsch.—p. 195.
Phallic Women. S. Blanton.—p. 214.
The Preschizophrenic Ego. B. Bychowski.—p. 225.

Southern Medical Journal, Birmingham, Ala.

40:455-542 (June) 1947

Anesthetic Accidents. R. S. Sappenfield and J. Adriani.—p. 455.
Treatment of Inoperable Cancer of Larynx with X-Ray After Preliminary Surgical Removal of Thyroid Cartilages with Improved Classification of the Larynx. M. F. Arbuckle.—p. 462.
*Complications Following Radiotherapy of Carcinoma of the Cervix Uteri. W. L. Thomas.—p. 467.
*Abdominoperineal Proctosigmoidectomy for Rectal Cancer Complicating Pregnancy: Report of 2 Cases. H. E Bacon and R. J. Rowe.—p. 471.
*Volume and Composition of Parenteral Fluids and Clinical Problems of Body Fluid Equilibrium. C. A. Moyer, M. Levin and F. W. Klinge.—p. 479.
Evaluation of Criteria for Convalescent Therapy. B. C. Blaine.—p. 490.
Poliomyelitis: Physician's Approach. I. E Sutton Jr.—p. 494.
Current Trends in Treatment of Coronary Disease: Discussion of Dicumarol Therapy. O. P. J. Falk.—p. 501.
Cardiac Complications and Deaths in Asthmatic Patients. M. I. Lowance, Eugenia C. Jones, W. B. Matthews and E. M. Dunstan.—p. 508.
Early Recognition of Allergic Tendencies in Infancy. W. A. McGee.—p. 515.
For a Better Interrelation of the Doctors of America. J. R. Aldereguia.—p. 519.
New Drug for Control of Cough in Chronic Pulmonary Disease. C. Rudner.—p. 521.
Practical Handling of Parasitology by Clinical Pathologist. M. Hood.—p. 523.
Practical Handling of Serology by the Clinical Pathologist. E. L. Webb.—p. 530.
Standardization of Physical Examination for Employment. T. R. Ramsay.—p. 534.

40:543-630 (July) 1947

Bronchography. J. M. Dell Jr.—p. 543.
Bronchiectasis: A Neglected Disease. J. A Rickles.—p. 551.
Hyperparathyroidism in Patient with Extensive Skeletal Deformities. J. E. Paullin and C. J. McLoughlin.—p 554.
Oral Smears Compared with Vaginal Smears: Case Report. P. B. Russell Jr.—p. 561.
Anesthesia for Severe Abdominal Wounds, Based on War Experiences with the 56th Evacuation Hospital. W R. Turnbow.—p. 563.
Evaluation of Methods of Surgical Treatment of Duodenal Ulcer. R. L. Sanders.—p. 567.
Diagnosis and Treatment of Peptic Ulcer. J W. Larimore.—p. 572.
Acute Diarrhea in Infancy and Childhood. F. Hurtado and A. J. Aballi.—p. 577.
Convulsive Electric Therapy: Technical Evaluations of New Series of 387 Cases: Observations and Conclusions. C. H. Denser.—p. 587.
Physical Medicine in Care of Rheumatoid Arthritis. H. F. Polley.—p. 596.
Treatment of Patients with Rectal Diseases. J. E. Linn.—p. 600.
Problems in Surgical Management of Hip Fractures. R. C. Lonergan.—p. 605.
Protective Value of Influenza Vaccine Assayed in Swine. J. W. Beard, I. W. McLean Jr. and Dorothy Beard.—p. 608.
Observations on Specificity of Folic Acid Molecule. T. D. Spies, R. E. Stone and R. Brandenburg.—p. 618.
Electrolysis. H. M. Robinson.—p. 618.

Complications Following Radiotherapy of Carcinoma of Cervix Uteri.—According to Thomas, irradiation is regarded as the method of choice in the treatment of cervical carcinoma. Complications of radiation therapy still occur in spite of the advances in the methods of administration and the safeguards now being employed. Sufficient treatment to destroy or arrest the carcinoma may cause certain and unavoidable damage to contiguous structures. The vaginal mucosa routinely develops an epithelitis manifested by reddening, edema and desquamation. Soothing deodorant douches are helpful. Adhesive vaginitis with occlusion of the canal should be prevented by manual and prosthetic dilations. Patients frequently show evidence of a mild bladder mucosal irritation during treatment or shortly thereafter. Bladder sedatives give much relief. Serious bladder complications do not appear until a year or more after irradiation unless there has been malposition of the radium. The incidence of rectal mucosal irritation is extremely high. Rarely does a patient go through the cycle of therapy without manifesting some proctitis. Paregoric, warm saline enemas and rectal instillations of a bland oil are helpful in alleviating the symptoms. The natural course is toward a spontaneous cure in most patients. Follow-up care is often neglected. Frequent follow-up examinations are necessary for the early recognition and treatment of the complications.

Abdominoperineal Proctosigmoidectomy for Rectal Cancer Complicating Pregnancy.—Bacon and Rowe recently cared for 4 patients in whom carcinoma of the rectum complicated pregnancy. Abdominoperineal proctosigmoidectomy without colostomy and with preservation of the sphincter muscle was performed in all with uneventful recovery. The histories of these patients are presented. Review of the literature revealed 70 cases in which cancer of the lower bowel complicated pregnancy but in many of which the tumor was not diagnosed. The symptoms in these cases are relatively the same as in any other cancer of the lower bowel, but they may be overshadowed by those of the pregnancy. Digital examination, proctosigmoidoscopy and opaque enema study are not contraindicated during pregnancy. Pertinent to the management of this complication the following procedures are recommended: (*a*) in early pregnancy (three months or less), abdominoperineal proctosigmoidectomy without colostomy and with preservation of the sphincter musculature, or, as a second choice, a Miles abdominoperineal extirpation, especially when the lesion is less than 6 cm. from the anal margin, and with relative disregard to the pregnancy; (*b*) in the second trimester where the fetus is not viable and the size of the uterus would necessarily interfere with removal of the growth, Porro section and resection simultaneously if the condition of the patient warrants such a procedure; (*c*) in the last trimester of pregnancy, cesarean section and hysterectomy followed by removal of the cancerous bowel two to four weeks later.

Parenteral Fluids and Body Fluid Equilibrium.—According to Moyer and his associates the indiscriminate use of parenteral and oral fluids may produce serious illness. The intravenous infusion of 0.9 per cent sodium chloride in water or in 5 per cent dextrose solution may be followed by a relative deficit of water, the retention of the salt solution in the body or the development of a deficiency of potassium. These changes in the composition or the volume of the body fluids may occur singly and in various combinations. Whether or not a relative deficit of water occurs during the administration of a 0.9 per cent sodium chloride solution, when it is the only parenteral fluid given, depends primarily on the patient's ability to excrete the salt injected in a sufficiently higher concentration in the urine than its concentration in the infusate so that a volume of water equivalent to that lost insensibly through the skin and the respiratory tract may be abstracted from the administered solution. The failure to abstract enough water from isotonic salt solutions may also be due to the failure to give enough of it or the failure to excrete enough urine. The development of a relative water deficit can be prevented by the use of 0.6 per cent saline solutions whenever large combined salt and water deficits need correction. The use of a hypotonic salt solution (0.6 per cent or less) will not prevent the retention of salt if it be given when it is not needed. The injudicious employment of 5 per cent dextrose solution intravenously or water orally may lead to serious illness whenever amounts are prescribed that are greater than the sum of the insensible loss of water and the maximum excretory capacity of the kidney for water. The latter may be severely depressed during illnesses and after surgical procedures. Illustrative case summaries are presented.

Wisconsin Medical Journal, Madison

46:581-668 (June) 1947

Treatment of Ocular Tuberculosis. F. N. Knapp.—p. 599.
Importance of Adequate Nasal Ventilation. F. G. Treskow.—p. 604.
What World War II Has Done for Neuropsychiatry. W. J. Bleckwenn.—p. 607.
Malignant Tumors of Pharynx and Larynx. F. A. Figi.—p. 611.
Gynecologic Endocrinology in General Practice. J. P. Greenhill.—p. 614.

46:669-760 (July) 1947

Ectopic Pregnancy: Analysis of 67 Consecutive Cases. Madeline J. Thornton.—p. 691.
Skin Manifestations of Menstruation. K. Wiener.—p. 694.
*Rh Factor in General Practice. G. P. Langenfeld.—p. 696.
Rh Factor in Obstetrics. J. A. Klieger.—p. 698.
Foreign Body in Stomach. J. M. Sullivan and W. B. Ross.—p. 701.
Treatment of Meningitis. K. B. McDonough.—p. 703.
Management of Dermatitis in General Practice. S. Epstein.—p. 707.

The Rh Factor in General Practice.—Langenfeld stresses that Rh testing should be done before giving whole blood transfusions to (1) all postpartum women, (2) female patients either before or during the child bearing years, (3) patients who are to receive multiple transfusions and (4) women past the child bearing years, especially if their obstetric history suggests the birth of an erythroblastotic baby. Rh negative patients should receive only Rh negative blood.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Heart Journal, London

9:1-76 (Jan.) 1947

Heart Murmurs: Part I. W. Evans.—p. 1.
Phonocardiograms of Auricular Murmurs from a Case with Mitral Stenosis and Heart Block. G. Nylin and G. Biörck.—p. 16.
Chronic Auricular Tachycardia. R. N. Herson and F. L. Willington.—p. 19.
Congenital Heart-Disease with Isolated Inversion of the Abdominal Viscera. P. Forgacs.—p. 27.
Subacute Bacterial Endocarditis with Onset as Optic Neuritis. R. Kauntze.—p. 34.
*Penicillin Treatment of Subacute Bacterial Endocarditis. A. M. Jones, R. Herring, F. A. Langley and S. Oleesky.—p. 38.
Infective Endocarditis of the Tricuspid Valve: Report of Case Due to Streptococcus Viridans. I. M. Librach.—p. 65.

Penicillin in Bacterial Endocarditis.—Jones and his collaborators say that by 1945 it was realized that to be successful penicillin has to be administered in large doses for long periods. Up to a million units has been given daily and the treatment has been continued for up to five to eight weeks. At the Manchester Center, 40 cases have so far been treated, but 7, in which less than six months have elapsed since treatment, are excluded from this review. Fifteen of the 33 unselected patients died. The degree of recovery is assessed in 18 successful cases. Although most patients resume their old occupations, increased residual cardiac damage is the rule and a small proportion may develop stenotic valvular lesions. Relapses following inadequate therapy, if promptly detected and adequately treated, do not appear to prejudice the ultimate outcome. The process of healing was studied microscopically in 12 cases and it was found that healing is not advanced until three months after clinical control of the infection. The authors discuss the causes of death in 15 cases and describe the postmortem aspects of 13 cases. They stress the importance of heart failure in causing death and say that cardiac damage caused by the infection is the chief cause of failure. Microscopic study of renal lesions in 11 cases showed that diffuse, not focal, glomerular lesions predominate. It is assumed that if similar lesions occur in patients who recover they may later cause renal insufficiency. Seven cases associated with pregnancy are discussed; 5 of the mothers and 6 of the children survived. In 1 case with an infected patent ductus arteriosus the ductus was ligated four months after successful penicillin treatment. The authors gained the impression that the duration of the infection before treatment is of greatest importance for the prognosis.

British Journal of Urology, London

19:61-120 (June) 1947

Ureteral Obstruction: Recent Advances in Its Embryology, Nosology and Surgery. D. M. Davis.—p. 71.
Causes of Death in Senile Benign Prostatic Enlargement: Survey of 643 Cases. W. S. Rees.—p. 83.
Roentgenographic Delineation of Adrenal Glands with Aid of Laminography. S. F. Wilhelm.—p. 85.

British Medical Journal, London

1:873-912 (June 21) 1947

*Social and Occupational Factors in Etiology of Skin Cancer. J. A. Ryle and W. T. Russell.—p. 873.
Measurement of Human Skill: Part II. F. C. Bartlett.—p. 877.
Modern Treatment in Psychologic Medicine. L. Minski.—p. 880.
*Penicillin in Treatment of Diphtheria. D. A. Long.—p. 884.
Splints for Fractured Noses. M. C. Oldfield.—p. 886.

Social and Occupational Factors in Skin Cancer.—Ryle and Russell, analyzing data obtained from annual reports of the registrar general for the United Kingdom and Eire, state that the annual number of deaths from cancer of the skin, excluding that of the penis and scrotum, is approximately 1,000 per annum in England and Wales, and the mortality in males is about 70 per cent in excess of that in females. The face is the principal site involved. The ear is next in frequency. The mortality has a definite gradient with social grouping for the wives of workers, but for the males it would seem to have both a social and an occupational relationship, and the latter is seemingly the more important. The anatomic character of some of the sites affected suggest, on the one hand, that atmospheric soot or other grime (as in the case of scrotal cancer) may need to be considered as an etiologic factor. On the other hand, ultraviolet radiation from the sun may be responsible for skin cancers in exposed sites. Heat, or heat plus grime, may be operative in such occupations as that of furnacemen, if the face and hands of these workers should be shown to be frequently involved.

Penicillin in the Treatment of Diphtheria.—Long considers the rapid elimination of pathogens with the prevention of further toxin formation as the aim of penicillin treatment of diphtheria. Reports in the literature, particularly those of Karelitz, induced him to employ much larger doses than had been employed before. Of 3 patients whose treatment was reported in detail, 2 were given 1 million units daily for three days and the third was given half a million units. This patient, who was less toxic than the other 2, recovered like the first 2, but her convalescence was complicated. Three further cases have been treated. All were mild, a million units of penicillin a day for three days was administered, and in none was it possible to demonstrate diphtheria bacilli after the first day's treatment. The author concludes that at least 1 million units a day would appear to be desirable in severe cases. The value of penicillin is particularly striking in the presence of secondary infection. The importance of early adequate antitoxin administration is emphasized.

Lancet, London

1:855-894 (June 21) 1947

*Infection of Wounds with Gram-Negative Organisms: Clinical Manifestations and Treatment. M. E. Florey, R. W. N. L. Ross and E. C. Turton.—p. 855.
Dietetic Deficiency Syndromes in Indian Soldiers. J. H. Walters.—p. 861.
Atypical Pneumonia: Significance of Cold Agglutinins. G. E. O Williams.—p. 865.
*Intradermal Reaction in Trichomonas Infection. S. Adler and A. Sadowsky.—p. 867.
Urticarial Reactions to Intramuscular Penicillin: Report of 4 Cases. L. Steingold.—p. 868.
Posttraumatic Fistula of Pancreas Successfully Treated by Surgery. G. Flavell.—p. 869.
Bilateral Pneumothorax After Partial Thyroidectomy. B. R. Billimoria.—p. 871.

Infection of Wounds with Gram-Negative Organisms.—The observations of Florey and his associates were made on 53 battle casualties with 63 lacerated wounds mainly involving compound comminuted fractures of the tibia and on 10 further superficial wounds caused by pressure sores and plastic operations. Since all the patients had received prophylactic injections of penicillin for various periods after wounding and continued to receive prophylactic local applications or intramuscular injections throughout their treatment, the gram-positive organisms commonly considered responsible for major sepsis were of minor significance. Clostridia were not a problem for more than three weeks in most wounds. It had been hoped to compare the state and progress of wounds containing gram-negative bacteria with those of wounds in which these organisms were not present; but 51 of the 56 which could not be closed by secondary suture harbored one or more species of gram-negative bacteria from the second week after wounding onward. It was therefore impossible to assess effects against a comparable number of controls. Lysis of surrounding clot, persistence of discharge and consequent interference with the processes of bony and soft tissue repair seem to be the main effect of gram-negative infection. Bacteriologic and clinical effects were observed of the daily local application of different agents in reducing the infection. Streptomycin was most effective in removing Escherichia coli, Pseudomonas pyocyanea and Proteus both rapidly and permanently in a few wounds. Sulfathiazole was effective in eliminating Escherichia coli and Proteus to a lesser degree. Sulfamezathine had a similar effect on Escherichia coli and Pseudomonas pyocyanea. The presence of Staphylococcus aureus in the wound was almost as effective as the two sulfonamides in reducing the gram-negative population. Neither operation nor enclosure in plaster of paris had any pronounced influence on the infection. Clinical application of these findings showed that deliberate use of the sulfonamides, with penicillin when necessary, or the use of streptomycin, could sterilize persistent sinuses so that they healed rapidly.

Intradermal Reaction in Trichomonas Infection.—Since it is not difficult to prepare bacteria free cultures of Trichomonas vaginalis by exploiting the bacteriostatic action of sulfonamides and penicillin, Adler and Sadowsky prepared antigens for such cultures and investigated whether vaginal infection with Trichomonas vaginalis produces any detectable immunologic reaction in the host. They found that in 35 of 43 women with a vaginal infection with Trichomonas vaginalis a skin test twenty-four hours after intradermal inoculation with 0.1 cc. of an aqueous extract of 1,000,000 (and in some cases of 2,000,000) flagellates per cubic centimeter gave a positive reaction. In 45 of 58 women negative on microscopic examination there was no reaction. Antigen of Trichomonas vaginalis is absorbed through the wall of the vagina.

Medical Journal of Australia, Sydney

1:717-738 (June 14) 1947

Some Aspects of Child Development and Mental Health. G. Springthorpe.—p. 717.
Some Observations on Blood Transfusion in a Highly Malarious Area. P. Braithwaite.—p. 725.
*Puerperal Tetanus: Report of 2 Cases, One Associated with a Pulmonary Embolus Infected with Clostridium Tetani: Also a Case Report of Postabortional Tetanus. J. I. Tonge.—p. 726.
Refrigeration Anesthesia; Report of a Case. J. G. Toakley.—p. 729.

Puerperal Tetanus.—According to Tonge, few cases of puerperal tetanus have been reported, and most of these have not been confirmed bacteriologically. Observations on 3 patients are reported in this paper: 1. A woman aged 27 developed pulmonary embolism on the seventh day and on the fourteenth day symptoms of tetanus from which she died. Clostridium tetani was recovered post mortem from the infarct in the lung and from the cervix uteri. The author is convinced that it is difficult to decide whether puerperal tetanus arises from the use of unsterile catgut, from vulval pads or by autoinfection from the patient's bowel. 2. Tetanus developed on the ninth day after an instrumental delivery and manual removal of the placenta. The tetanus proved fatal. 3. Tetanus developed after an induced abortion. Symptoms developed on the eighth day, and death followed on the thirteenth day after abortion.

South African Medical Journal, Cape Town

21:337-378 (May 24) 1947

*Criticism of Present Day Methods in Treatment of Varicose Veins. N. Garber.—p. 338.
New Drug for Arthritis. A. Raff.—p. 349.
Schistosomiasis: Review of Work in Southern Rhodesia in 1946. W. Alves and D. M. Blair.—p. 352.
Sporadic Cretinism and Ichthyosis in Same Family. J. Helman.—p. 358.

Criticism of Treatment of Varicose Veins.—Garber believes that sclerosing injections have nothing to recommend them, for not only do they fail to cure but they expose the patient to loss of life or limb, prolonged morbidity or expense. Similar penalties beset operation coupled with the use of sclerosants. In the multiple resection operation the writer envisages a surgical procedure not difficult of accomplishment by the trained surgeon. It is free of hazards associated with sclerosants, and it extends the promise of permanent cure in young or old, without the added burden of pain or prolonged disablement. The author believes that, when the great saphenous is subdivided into segments ¾ to 1 inch long, tied at both ends with fine silk, the influence of all perforators, actual or potential (channels concatenating the great and small saphenous to the deep veins), becomes nullified as the T shaped fragments rapidly thrombose and cicatrize. Not only is the operation effective in the thigh, but it is preeminently suited for obliteration of the numerous perforators in the calf. The attention bestowed on the great and small saphenous veins should likewise be devoted to isolated varicose perforators (gluteal, calf and popliteal) and to the vessels draining the skin and passing directly to the femoral vein, but avoiding the great saphenous. Certain authors utilize venous competency tests to correlate operative measures with the degree of varicose transformation in veins. Garber disapproves of this policy. He thinks that, since varicosity is progressive and since there is a proved remedy, it should be employed in as many cases as possible.

Acta Medica Scandinavica, Stockholm

127:361-500 (May 10) 1947

Course of Paralyses in Poliomyelitis Patients. Gerda Schwartz Kristensen and F. Wulff.—p. 361.
Resistance to Caries in Relation to Certain Properties of Saliva F. Bárány.—p. 370.
Prognosis for Acute Nephritis. Ruth Ramberg.—p. 396.
New Research on Red Blood Corpuscles: III. Ripening Time of Reticulocytes in Man in Vitro and in Vivo. A. Nizet.—p. 424.
*Liver Biopsy in Thyrotoxicosis. J. Piper and E. Poulsen.—p. 439.
*Endocrine and Mental Disorders in Acute Anterior Poliomyelitis. R. Luft and R. Müller.—p. 448.
Maximum Tubular Excretion of Diodrast in Normal Human Kidney. C. Brun, T. Hilden and F. Raaschou.—p. 464.
*Importance of Aseptic Technic and Fallaciousness of Chemical Bacteriostatics in Blood Banking and Plasma Preserving. B. Swedberg, G. Widström and K. Alin.—p. 480.

Liver Biopsy in Thyrotoxicosis.—Piper and Poulsen studied the functional capacity of the liver in 30 patients with thyrotoxicosis. Liver biopsy by means of Iversen and Roholm's method was performed on 15 of these patients. Little or no functional impairment was demonstrated by the functional tests. Biopsy revealed only slight and atypical changes; the glycogen content was reduced in 7 patients, there was mild steatosis in 3, delicate dark streaks of cells as in chronic irritation were presented by 5, slight round cell infiltration was observed in 2 and hyalinized connective tissue was seen in 1 patient. It is concluded that even in pronounced cases of thyrotoxicosis the functional capacity of the liver is affected to only a slight extent. The presence of anatomic changes in the liver of these patients cannot be demonstrated by aspiration biopsy. The prognosis of surgical intervention in thyrotoxicosis is not aided by liver biopsy. In the absence of definite signs of damage to the liver there is no particular reason to postpone surgical treatment under general anesthesia.

Endocrine and Mental Disorders in Poliomyelitis.—Luft and Müller examined 66 persons, 54 of whom had acute poliomyelitis during the period of 1944 to 1945 and 12 during the period of 1934 to 1936; endocrine disorders were observed in 20 of these patients, all of whom were women. The endocrine disorders varied to a large extent; there were menstrual disorders in 8 patients, changes of body weight in 11, disturbances of sexual development and that of the body in 3, increased thirst in 3. Decreased dextrose tolerance was demonstrated in 14 patients on whom dextrose tolerance tests were performed. Hypertrichosis was present in 24 patients. It was most common in patients with pronounced paresis of the extremities. In several of these cases the hypertrichosis was probably a manifestation of a trophic disorder following injury of the peripheral neuron. Mental disorders were observed in 36 of the 66 patients. Those who had poliomyelitis as adults showed mental disorders of the organic neurasthenic type. In 4 of the 7 patients who had the disease during childhood a change of personality was noticed. The frequency of mental disorders was equal in childhood and in adults. Physical invalidity was of little importance for the development of mental disorders. There was no correlation between clinical signs of encephalitis during the acute stage of poliomyelitis and endocrine or mental disorders in the afterstage. Endocrine and mental disorders appeared independently of each other. The pathologic-anatomic basis of these endocrine and mental disorders is obscure; they could be considered as manifestations of inflammatory changes in the hypothalamus.

Aseptic Technic in Blood Banking and Plasma Preserving.—Widström's method for the production of plasma for military use in Sweden from 1943 to 1945 is an open method with considerable possibilities of bacterial infection. Experiments carried out by Swedberg and his co-workers verified Novak's experience that sulfathiazole has a distinct bacteriostatic effect against both staphylococci and Escherichia coli. By the addition of 100 mg. of sulfathiazole per hundred cubic centimeters and rapid cooling of the blood and plasma preparation within five days it was believed that bacterial growth in the blood might be prevented. The plasma was stored, when ready, at —15 to —25 C. and sterilized by filtration immediately before drying. The clinical results with this plasma were good. Most of the plasma was dried immediately, but some was stored in the liquid state to afford experience with this method of storage. Bacterial and fungoid growth was demonstrated on bacteriologic examination one to one and a half years later. Complete resistance of this growth to sulfathiazole (500 mg. per hundred cubic centimeters) as well as to merthiolate concentrations demonstrated again the importance of aseptic methods of production from the collection of the blood to the dispensation of the finished plasma. No bacteriostatic addition can take the place of aseptic technic.

Deutsche medizinische Wochenschrift, Stuttgart

72:145-176 (April 4) 1947. Partial Index

- Diagnosis of Polysclerosis for General Practitioner. F. A. Kehrer.—p. 147.
- Limitations of Desoxycorticosterone Acetate in Treatment of Gastric and Duodenal Ulcers. H. E. Bock and H. Meinrenken.—p. 149.
- *Urethane in Treatment of Chronic Leukemia. E. Schulze.—p. 153.
- Influence of War and Afterwar Period on Course of Tuberculosis. O. Koch.—p. 158.
- Cardiac Factor in Pathogenesis of Apoplectic Stroke. H. Sack.—p. 163.
- Intestinal Necrosis: III. Roentgenologic Investigations. W. Frik.—p. 164.
- Id.: Clinical Observations on Acute Intestinal Necrosis in Young Children. J. Jochims.—p. 166.

Urethane in Treatment of Chronic Leukemias.—Experimental studies had demonstrated that urethane inhibits tumor growth in animals. Haddow and his collaborators found that results obtained with urethane compared favorably with those obtained with roentgen therapy. Schulze treated chronic leukemias of the myeloid and lymphatic types with urethane. He describes observations on 5 patients with chronic myeloid leukemia and 2 with chronic lymphatic leukemia subjected to urethane treatment. Urethane, which is an ethyl carbamate, was first given by mouth, the individual dose amounting to 1 Gm. and the daily dose varying between 3 and 5 Gm. The patients usually tolerated the medicament in this form for about eight days, when gastric disturbances often set in. Medication was then continued by clyster. The number of leukocytes could be reduced to practically normal values. The differential white blood picture was practically normalized in the myeloid forms of leukemia, in which the therapeutic response was best. The immature leukocytes disappeared almost completely from the peripheral blood. Existing splenic tumors decreased in size and, when anemia accompanied the leukemia, hemoglobin and erythrocytes usually increased. The action of urethane may be due to its toxic effect on mitosis.

Giornale di Medicina Militare, Rome

94:97-180 (March-April) 1947. Partial Index

- *Acute Pseudoappendicitis Caused by Bite of Spider: Cases. G. Rindone.—p. 144.

Acute Pseudoappendicitis.—Rindone reports 5 cases of an acute abdominal condition with symptoms of acute appendicitis caused by spider bites. The bite was on the neck in 3 patients, on the arm in 1 and on the thigh in 1. The symptoms of spider poisoning, although very similar to those of acute appendicitis, do not show acutely progressive aggravation. Generally they are complicated by convulsions and pains in the extremities and they subside within three days.

Presse Médicale, Paris

55:389-400 (June 7) 1947

- *Paradoxical Condition of Vasoconstrictors of Face Characterized by Attacks of Active Vasodilatation Under Influence of Cold; Inversion of Reactions to Cold. R. Leriche.—p. 389.
- Pneumonoconiosis in Miners and Aerosols (Examination of Respiratory Function; Problems of Indemnity). J. Minet, M. Fontan and A. Bonduelle.—p. 389.
- Tetany and Pregnancy: Respiratory and Comatose Postabortal Forms. A. Placa.—p. 391.
- Gastroduodenal Ulcer: Its Etiology and Pathogenesis. M. R. Graulich.—p. 392.

Paradoxical Condition of Vasoconstrictors of Face.—Leriche reports the occurrence of a paradoxical syndrome of the vasoconstrictors of the face in a man aged 32. The patient presented a sudden redness of the entire face associated with a sensation of heat, mild vertigo and headache any time during winter and fall when he went outdoors, leaving the warm atmosphere of his room and exposing himself to the cold. The cold produced an active vasodilatation, more pronounced than that which follows anesthesia of the stellate ganglion or excision of the superior cervical sympathetic ganglion. The syndrome occurred in the absence of any cause; active hyperemia was produced by factors which normally cause vasoconstriction. It is apparently an instance of an inversion of the reaction to cold. Induced anesthesia of the stellate ganglion was followed immediately by an oculopupillary syndrome and then by vasoconstriction of the conjunctival vessels and of those of the face. The vasomotor reaction therefore was inverted; there was no therapeutic result.

Revista de Medicina Experimental, Lima

5:1-108 (Dec.) 1946. Partial Index

- *Effects of Coca and Cocaine in Experimental Avitaminosis from Lack of Thiamine. C. Gutiérrez-Noriega.—p. 1.

Coca, Cocaine and Avitaminosis.—People of Peru consume a diet which is poor in vitamins and coca as a neurostimulant. There are no available reports in the literature on the interrelationship of cocaine and thiamine. Gutiérrez-Noriega found in experiments on pigeons that the effects of cocaine are more acute in pigeons deprived of thiamine in their diet than in normal pigeons, and that the symptoms of avitaminosis in pigeons deprived of thiamine become increased from daily administration of coca in the course of avitaminosis.

Schweizerische medizinische Wochenschrift, Basel

77:627-654 (June 14) 1947. Partial Index

- *Treatment of Residual Pulmonary Cavities with Aid of Lobectomy. A. Brunner.—p. 630.
- Physician, Patient and Sick Insurance. H. Fischer.—p. 631.
- *Traumatic Tuberculosis. W. Löffler.—p. 637.
- Nature of Deposits in Gout Nodules. E. Brandenberger, F. de Quervain and H. R. Schinz.—p. 642.
- Development of Functional Structures in Region of Intervertebral Disks. G. Töndury.—p. 643.
- Eosinophilia in Rheumatic Ancylopoietic Spondylarthritis. A. Böni.—p. 647.
- Changes in Electrocardiogram Caused by Sauna Baths: Action Mechanism of Physical Therapy. V. R. Ott.—p. 648.

Lobectomy in Treatment of Residual Cavities.—Brunner says that following chronic pulmonary abscesses there often remain more or less extensive cavities with bronchial fistulas which do not close completely in spite of adequate thoracoplasty. The term "latticed lung" is often applied to these cavities because adhesions and niches create the impression of lattice work. After pointing out that the operation of Garrè-Lebsche is difficult and involves the danger of air embolism and that muscle plastic according to Nissen also involves certain difficulties, he suggests that lobectomy is advisable whenever the major portion of a pulmonary lobe is occupied by a residual cavity or if, in addition to a cavity, bronchiectasis causes considerable production of pus. He demonstrates on the basis of 3 case reports that lobectomy will produce cure without a persisting fistula even if there was a large cavity and continued pus secretion.

Traumatic Tuberculosis.—The 2 cases reported by Löffler represent classic examples of decisive change in the course of existing tuberculous process by intercurrent traumas. 1. A man aged 53 who had been well had a fall in which his chest violently struck the ground in the region of an old calcified pulmonary process. Eight days after the fall he had a hemoptysis and a rise in temperature. Twenty-four days after the accident irregular fever developed, and on the sixtieth day a roentgenogram demonstrated miliary tuberculosis, whereas twelve days after the accident a roentgenogram had been negative as regards miliary tuberculosis. Eighty-six days after the fall the patient died. Necropsy revealed a hematogenic miliary dissemination and a bronchogenic dissemination by aspiration. 2. A woman aged 32 sustained a trauma of the abdomen with muscular contusion and hemorrhage of the bladder. At the age of 28 she had had open tuberculosis on the right side, for which sanatorium treatment, phrenic exeresis and pneumothorax had been given. The tuberculosis had become arrested. Several months after the accident there appeared signs of renewed activity of the tuberculous process, with increase in temperature, night sweats, reappearance of tubercle bacilli in the sputum and appearance of an area of infiltration. The thrust against the abdomen was transmitted to the thorax the more readily because the patient had undergone a phrenic exeresis.

Book Notices

Nutritional and Vitamin Therapy in General Practice. By Edgar S. Gordon, M.D., Ph.D., Associate Professor of Medicine, University of Wisconsin, Madison. Third edition. Cloth. Price, $5. Pp. 410, with 47 illustrations. Year Book Publishers, Inc., 304 S. Dearborn St., Chicago 4, 1947.

The third edition of this practical physician's guide maintains the same high quality as was found in earlier editions. It is a condensed outline and evaluation of the present status of information. At times the text appears to be ultraconservative. On the other hand, one is rather surprised at the inclusion of highly technical material which can be of little interest to the clinician. It might be worth while to ascertain how many practitioners are interested in the biophotometer or the structural formulas of various compounds. Diagnosis of deficiencies and practical methods of treatment constitute the greatest contribution of the work. The illustrations supporting this part of the work are, accordingly, most valuable. The discussion of protein, fat and carbohydrate appears to be a trifle too sketchy, although there are certainly no misstatements. The chapters on weight control and on dental nutrition are especially sane. Reading the chapter on the economic side of clinical nutrition, one has an impression that the author is floundering a bit. The table on page 374 is especially good, however. An appendix carries a good list of commercial preparations. Also there is a brief statement of laboratory methods of vitamin assay which contains about all that a practitioner is likely to need on this subject. The tables on nutritive values of selected foods would be much more valuable if stated in terms of average servings rather than in 100 Gm. portions. Most clinicians find it sufficiently exact to prescribe diets in terms of everyday experience.

Oral Surgery. By Sterling V. Mead, D.D.S., M.S., B.S. Third edition. Cloth. Price, $15. Pp. 1,150, with 821 illustrations. C. V. Mosby Co., 3207 Washington Blvd., St. Louis 3, 1946.

Since its first edition in 1934, this has probably been the most complete and comprehensive textbook for the dental student as well as the practicing dentist. It thoroughly covers all phases of oral surgery and can be successfully used as a reference work by the specialist. The third edition brings the book up to date by presenting knowledge obtained since publication of his second edition and also makes certain corrections in the text. A few of the notable additions are the many improvements in oral surgery which resulted from the war, the chapter on chemotherapy, which discusses at length the sulfonamide drugs as well as penicillin, the chapter on nutrition, which places a new value and importance on the relationship of diet and oral health, and improved methods of surgery and prostheses in orofacial deformities. The subject matter is presented clearly. It is not merely the opinions of the author but is backed up by actual clinical experiences of the author or some other authority. The book is well organized and contains an unusual number of excellent illustrations and diagrams. The various technical procedures are particularly well illustrated. A book of this type and caliber continually proves its worth in the field of dentistry.

The Acoustic Impedance Measured on Normal and Pathological Ears: Orientating Studies on the Applicability of Impedance Measurement in Otological Diagnosis. By Otto Metz. Denne Afhandling er af det lægevidenskabelige Fakultet antaget til offentligt at forsvares for den medicinske Doktorgrad, København. Paper. Price, 10 Danish kroner. Pp. 254, with 30 illustrations. Einar Munksgaard, Nørregade 6, Copenhagen K, 1946.

This is a comprehensive discussion on methods and means to find an empirical correlation between the acoustic impedance of the ear as measured at the tympanum and conductive deafness, as described in otologic terminology. The hope no doubt was that ultimately such a measurement could be perfected as a useful routine diagnostic test. The conclusion seems to be that it is still in a hopeful experimental stage.

A measurement of acoustic impedance may be regarded as an extension, quantitative and qualitative, of the older tests of "mobility" of the tympanum and its surrounding appendages. Being purely an external test, it can hardly be expected by itself alone to discriminate clearly between different kinds of conductive lesions in the complex measurement beyond the drum unless it is found later that such lesions invariably follow a simple pattern. The solution of the problem of the dynamics of normal conduction through the middle ear would seem to be a substantial help if not a necessary prerequisite to such a development.

The subjects covered in this volume are pertinent fundamental principles of acoustics, acoustic impedance apparatus and measurement, previous work on ear impedance, test room technics, sources of error, normal ears and abnormal ears, followed by several sections devoted to the study of the relation of these to other tests and diagnoses.

The work has been done with great care and attention to detail and represents a substantial contribution to a much neglected phase of scientific otologic literature.

Traité de neuro-endocrinologie: Le système neuro-endocrinien, le complexe hypothalamo-hypophysaire, la neuro-ergonologie et son évolution récente. Par Gustave Roussy et Michel Mosinger. Paper. Price, 2,200 francs. Pp. 1,106, with 261 illustrations, Masson & Cie, 120 Boulevard Saint-Germain, Paris 6e, 1946.

The authors have written an important, timely and fully authoritative treatise on the relationships between the nervous system and the endocrine glands. The book is divided into five parts: 1. An excellent description of the neurovegetative system, with special reference to its relation to endocrine functions. 2. Several chapters on the nervous system in general. 3. A section on the physiologic and related histologic descriptions of neuroglandular correlations. 4. Pathologic processes and variations encountered in the neuroendocrine system. 5. A description of catalyzers, hormones and enzymes and their functions in the body economy. The illustrations are partly diagrammatic and partly photomicrographs. Most of them are quite good.

The authors put emphasis on the hypothalamus and its outgoing fibers in explaining endocrine syndromes. This is most praiseworthy, since such considerations help greatly in explaining the genesis and expected degree of success in the treatment of glandular disturbances. While it may be difficult for the clinician to read the book in its entirety, it should prove most valuable for frequent and constant reference. The arrangement and the many integrated subdivisions with an abundance of subtitles makes for ease of use for all those who can read French. The style is lucid, readable and not too involved. The reader is also helped by an extensive bibliography. The book shows the wealth of digested information the authors seem to possess.

Diagnostic hormonal et traitements hormonaux en gynécologie. Par Claude Béclère. Préface du Professeur H. Simonnet. Paper. Price, 525 francs. Pp. 371. Masson & Cie, 120 Boulevard Saint-Germain, Paris 6e 1946.

Béclère has written a well arranged treatise on the relationship of hormonal influences to gynecologic disorders. He has presented it sufficiently clear and simple to be useful not only to the gynecologist but, equally and perhaps more so, to the practitioner.

The book has three main divisions: (1) the normal physiologic considerations as they exist during the principal periods in the life of the female, (2) an exhaustive description of the useful hormones used in practice, with indications and dosage of each, and (3) diagnosis and treatment of hormonal disturbances and diseases caused by them. A section is also included describing laboratory methods for measuring hormone excretions.

Throughout the text the author shows his thorough knowledge of the subject and his apparent experience in teaching. It is refreshing to note that the use of testosterone in the female receives the adequate status it deserves, a subject from which a number of authorities have shied away because they felt that "male" hormones should not be used in the female. Caution is advised, however, throughout in its use. A unique chapter deals with the hormonal causation and treatment of uterine fibroids. Although the author leans toward the use of testosterone rather than progesterone, American authors lean more toward the latter. Otherwise the book follows fairly closely the books seen in American literature. The work may well be recommended.

Aural Atlas. Edited by Samuel J. Kopetzky, M.D., F.A.C.S., Acting Otolaryngologist, New York Polyclinic Medical School & Hospital, New York, Ralph Almour, M.D., F.A.C.S., Professor of Otolaryngology, New York Polyclinic Medical School & Hospital, Julius Bell, M.D., F.A.C.S., Instructor in Otolaryngology, New York Polyclinic Medical School & Hospital, and Murray B. Gordon, M.D., F.A.C.P., Professor of Clinical Pediatrics, Long Island College of Medicine, Brooklyn. Fabrikold. No pagination, with 4 plates by Alfred Feinberg and 45 illustrations by Eve Madsen. Auralgan Research Division, New York, 1946.

This small atlas contains forty-nine plates depicting the various structural and pathologic conditions that are so often seen clinically. The paper is of excellent quality. The illustrations and titles are crystal clear. This atlas should interest every physician, though the pediatricians and otologists will find it of greater value than those in other specialties. The general practitioner ought to derive much information from these pages since they offer a visual review of the drum membrane in different otitic infections. The atlas may also serve as an aid in teaching, and perhaps occasionally the pediatrician or otologist might show the approximate illustration to an intelligent patient, thus obviating the necessity of wasting his valuable time to explain a certain otitic condition to one not familiar with otology.

Child and Adolescent Life in Health and Disease: A Study in Social Pædiatrics. By W. S. Craig, B.Sc., M.D., F.R.C.P.E. With a foreword by Professor Charles McNeil, M.A., M.D , F.R.C.P. Cloth. Price, $7. Pp. 667, with 202 illustrations. William Wood & Co., Mount Royal and Guilford Aves., Baltimore 2, 1946.

This excellent handbook of social pediatrics deals with the progressive development of social measures for the protection of British children in health and disease during the past three hundred and fifty years. It is of particular value as a source of reference at present, when the facilities for the medical care of children are being subjected to scrutiny with an effort toward betterment. Even though great progress has been made, the author points out the incompleteness of the program currently in effect. The scope of the text includes medical, social and educational measures and facilities, without undue emphasis on any single phase but with an attempt to integrate all services toward the safeguarding of the individual child. The need for projection of care through the period of adolescence is emphasized. From the medical point of view, special attention is directed toward available measures for the maintenance of child health, help for the handicapped, treatment of the sick and services for the medical care of certain conditions arising during childhood. Included with other valuable and interesting information in the appendix are data relating to facilities in representative British hospitals, convalescent homes and special schools both in the hospital and in the home. The book is written in an interesting manner and seems authoritative in its content. As is stated in Professor McNeil's foreword, it should be read by every one concerned with the care of children and adolescents, by all teachers of doctors, midwives or nurses who practice child care, and by all who devise and control the machinery of administration.

History of Medical Thought: An Essay. By Richard A. Leonardo, M.D., Ch.M , F.I.C.S. Cloth. Price, $2. Pp. 92, with 16 portraits. Froben Press. 4 St. Luke's Place, New York 14, 1946.

An apparent expansion of interest in the history of medicine may be the result of several factors. As has been evident in the past, periods of disturbance and uncertainty have not infrequently been associated with an awakened interest in the field of medical history—possibly as a mental refuge, possibly in the endeavor to understand the present in the framework of the past. Leonardo's essay on the history of medical thought is an illustration of this tendency. The title is well chosen, for the seven chapters give a succinct, well ordered and very readable survey of the mental approach of the physician to the clinical problem of disease during the centuries that have passed since Hippocrates. The author does not attempt a history of medicine and so the young student who wants to know the details of the development of the art and science of medicine will not be satisfied; but the physician who is still a student will find much of interest. Of course one may find statements, for instance that German medicine reached its height in the eighteenth century, to which one might take exception, but the treatise is well balanced and, despite the condensation, presents a fair evaluation of the great schools of medical thought. As such it will no doubt prove of real value. Sixteen portraits, some of which are not particularly relevant, are appended.

Bone and Bones: Fundamentals of Bone Biology. By Joseph P. Weinmann, M.D., and Harry Sicher, M.D. Cloth. Price, $10. Pp. 464, with 289 illustrations. C. V. Mosby Co., 3207 Washington Blvd., St. Louis 3, 1947.

It is unusual for a book of this nature to be the product of two physicians, one an anatomist, the other a pathologist, who are primarily associated with schools of dentistry. A tremendous amount of study, research and effort has been incorporated in it and the result is the best survey of bone biology, pathology and histology yet published. Confusion exists among bone pathologists, particularly with regard to the classification of tumors and the fate of aseptically necrotic bone. The authors present these controversial subjects in a simplified manner, and any student can understand the clear language used. The chapter on development of bones is concise, with an excellent conception of membranous and enchondral ossification. A large number of well chosen high power photomicrographs serve as unusually effective illustrations for the text material. The pathologic conditions presented are described and discussed in a brief and logical manner. The list of conditions discussed is not complete, but the authors make no claim for a textbook of bone pathology. This volume, however, is strongly recommended for all surgeons and students with an interest, academic or clinical, in bone and joint disease.

Manual de dermatología. Editado bajo los auspicios del Comité médico de la División de ciencias médicas del "National Research Council." Por Donald M. Pillsbury, M.D., Marion B. Sulzberger, M.D., y Clarence S. Livingood, M D. Cloth. Price, $7. Pp. 470, with 109 illustrations. M. V. Fresneda, Neptuno 561, La Habana, Cuba, 1947.

This is a translation by Roberto Quero, Havana, into Spanish of the English edition of the Manual of Dermatology issued during the war under the auspices of the Committee on Medicine of the National Research Council. The only addition by the translater to the original book is at the end of the chapter on dermatitis produced by plants, where he lists the Cuban plants capable of producing dermatitis.

Clinical Allergy: A Monograph on the Management and Treatment of Allergic Diseases for General Practitioners and Students of Allergy. By Alexander Sterling, M.D., assisted by Bea Sterling Hollander, A.B., M.D. Cloth. Price, $5. Pp. 198, with 16 illustrations. International Universities Press, 227 W. 13th St., New York 11, 1947.

The subject of allergy has grown so fast that no one book can be adequate. This book is small and consists chiefly of case reports. Some are very interesting while others are lacking in important details and are without definite etiologic factors. Much space is given to headings and subheadings, so that there really is but little information which a reader can glean from what little space is left. There are errors in spelling, and one glaring mistake is a statement that sensitivity to ragweed could not be transferred (in the original work of Prausnitz and Kustner). These two men lived in Germany, where ragweed is not a factor. The author is one of the pioneers in allergy and has contributed to its progress. He would have been well advised to undertake a larger work with more material and more suggestions for students and physicians. Authors of future small books on allergy should concentrate on one allergic condition.

A Directory of Agencies and Organizations Concerned with Rehabilitation and Services to the Handicapped. Compiled by Howard A. Rusk, M.D., and Eugene J. Taylor, M.A. Paper. Price, 10 cents. Pp. 133. New York Times, Times Square, New York 18, 1947.

This helpful publication gives the name, location, principal officers, history, services performed and publications of all important public and private agencies engaged in rehabilitation activities.

Queries and Minor Notes

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically stated in the reply. Anonymous communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

STATUS ASTHMATICUS

To the Editor:—I would appreciate an outline and discussion of therapy for status asthmaticus, with special reference to the use of barbiturate sedation and meperidine hydrochloride (demerol).

Harry W. Orris, M.D., New York.

Answer.—The term status asthmaticus is generally used to designate a state of continuous asthma which fails to respond to routine treatment. The definite mechanism for this refractory state is not known. The seriousness of the condition demands experience and flexibility in the treatment of the various symptoms that may arise. Above all, excessive therapy must be avoided. It is commonly the case that epinephrine has been used excessively during the period preceding status asthmaticus. The patient in status asthmaticus is usually refractory to epinephrine, and its administration must be stopped for from twenty-four to forty-eight hours. To relieve the bronchospasm, aminophylline 0.25 to 0.5 Gm. given intravenously every three to four hours is frequently helpful The presence of anoxia may be helped by the administration of oxygen, especially if used with 80 per cent helium. For this a properly designed mask to prevent the loss of helium is helpful. The helium facilitates the absorption of oxygen. If the patient is dehydrated, either because of excessive perspiration or as result of vomiting, fluids should be given by mouth if the patient is able to retain them, or parenterally. The use of isotonic solution of sodium chloride intravenously or by hypodermoclysis may be indicated to replace the loss of chlorides if the patient has been vomiting excessively. In prolonged attacks it may be necessary to supply food by the use of 5 per cent glucose solution subcutaneously and by the use of amino acids intravenously.

Above all, rest is essential in severe status asthmaticus. The general relaxation produced by six to eight hours of sleep may result in considerable lessening of the severity of the attack, so that the patient responds to ordinary therapy. Rest is commonly obtained by the use of barbiturates in heavy doses. One should, of course, attempt to find out whether the patient is allergic to barbiturates, as may occasionally happen. It has been found advantageous to use chloral hydrate 1 to 2 Gm. by mouth or 2 to 4 Gm. by retention enema, repeated if necessary in four to six hours. This avoids the problem of barbiturate sensitivity and affords a reliable hypnotic. Paraldehyde is another useful drug that is effective. In severe cases 150 cc. of ether in an equal amount of olive oil administered slowly by rectal tube has been used to produce sleep, frequently with relief of the asthma. Neither meperidine nor morphine should be used in status asthmaticus because of the danger of respiratory depression. While some controversy exists on this question, the majority of allergists condemn the use of morphine because of its dangerous central action on the respiratory center. Meperidine has a similar action and, until experience with its use is much greater than it is at present, it should not be used in severe asthma. Unlike morphine, which acts to produce bronchospasm, meperidine produces bronchodilatation. This, however, is not sufficient to overcome its disadvantages as a respiratory depressant.

Status asthmaticus is a serious condition which cannot be treated according to any predetermined rule or rules. The physiologic balance of the patient may be disturbed in various ways. Some patients may require fluids, others may require salt. All patients with status asthmaticus require rest through carefully selected sedatives. The symptoms should be treated as they arise, and overtreatment must be avoided.

MANAGEMENT OF MENOPAUSAL SYNDROME AFTER BREAST CANCER

To the Editor:—Is estrogen contraindicated in treatment of a woman aged 45 with menopausal symptoms who had a radical mastectomy for carcinoma of the breast four years ago?

E. J. Levine, M.D., Chicago.

Answer.—The administration of estrogens to a menopausal patient with a personal history of cancer of the genital tissues such as the breast is definitely contraindicated. Estrogens may be sufficiently irritating to these tissues in sensitive persons so that a recurrence may be induced. The acceptance of this view has been substantiated by the therapeutic procedures now being investigated, such as removal of the ovaries of women with breast cancer if they are still menstruating, as well as the administration of androgens to women with this lesion to neutralize endogenous estrogens. The latter treatment is partially successful in alleviating the pain from metastases. Apparently, therefore, estrogens do have a varying but significant stimulating action on breast cancer. It is suggested that in order to obtain relief from the menopausal symptoms of such patients treatment with androgens such as methyltestosterone by mouth or testosterone propionate by injection be initiated. If these are not effective, sedation with the usual drugs may be of some benefit.

PRECIPITATE OR FUNGI IN VIALS OF HAY FEVER ANTIGEN

To the Editor:—I have noted a sediment in some vials of hay fever antigen and have been informed that it is a mold which contaminates the solution due to repeated punctures of the rubber stoppers by hypodermic needles. What kinds of molds would grow on such a simple medium, i. e. dust antigens in saline solution? Would any pathogenic fungi grow in this medium? What harm might come of an injection of material so contaminated?

M.D., Bronx, N. Y.

Answer.—It is possible for both nonpathogenic and pathogenic fungi to grow in the medium described. It is unlikely, however, that pathogenic fungi would find their way by a contaminating syringe. Naturally the possible ill results would depend mainly on the question of pathogenicity of the fungus; the saprophytes and the ordinary skin pathogens are the least harmful. It is suggested also that, unless bacteriologic investigation of the material has been made by one experienced in the recognition of fungi, it be not taken for granted that a sediment in such antigen solution is due to fungi. More often such sediment is due to the precipitation from the solution of one of the chemical ingredients, possibly polysaccharides.

POSSIBLE SYPHILIS WITH LIVER INVOLVEMENT

To the Editor:—A youth aged 18, seen on Jan. 1, 1947, complained of a weight loss of 14 pounds (6.4 Kg.), weakness and anorexia of four weeks' duration. Physical examination revealed only bilateral, discrete, pea size cervical, inguinal and axillary adenopathy. The liver edge was palpable two fingerbreadths below the costal margin and was slightly tender. The neurologic examination was negative. The complete blood count was normal. The urine was negative for bile. The urinary urobilinogen was normal. The quantitative blood bilirubin was less than 1.5 mg. per hundred cubic centimeters. The sulfobromophthalein liver function test (2 mg. per kilogram) showed 8 per cent retention in one-half hour. The twenty-four hour Hanger cephalin flocculation test was 4+ in twenty-four hours. The sedimentation rate was normal. The quantitative Kolmer reaction was 4+ (160 units). One month later the symptoms were unchanged, and the blood Kolmer reaction (state board of health) still showed a titer of 160 units. The spinal fluid examination, Wassermann reaction, cell count, protein and colloidal gold test were negative. A history of exposure could not be elicited. The mother recalled that at the age of 4 years the patient was taken care of by a colored woman who she later learned had received shots for a "blood condition." Beginning February 1 he received 4,800,000 units of penicillin over a period of one week at the rate of 600,000 units daily (Abbott's penicillin in oil, Romansky formula). This was followed by 2 cc. intramuscularly every five days of Squibb's iodobismitol. So far he has received eight injections. There has been a weight gain of 6 pounds (2.7 Kg.). The sulfobromophthalein test (5 mg. per kilogram) is now negative. The Hanger cephalin flocculation test shows no flocculation at the end of the forty-eight hour period, and the appetite has returned. The quantitative Kolmer remains at 160 units. The adenopathy is less and the liver edge is no longer palpable. Kindly discuss diagnosis and advise regarding additional treatment.

M.D., Kansas.

Answer.—The possibility that this is a case of syphilis with some liver damage at the commencement of therapy is good. To be considered among the diagnostic possibilities are (1) an infectious process involving the liver with a biologic false positive serologic test for syphilis, (2) a recently acquired syphilis with an acute syphilitic hepatitis and (3) a syphilis of long standing with gummatous or interstitial involvement of the liver.

Biologic false positive reactions associated with nonsyphilitic disease are apt to be of low titer and not sustained. While titers of the blood in acute infection in the absence of syphilis may reach levels greatly in excess of 160 units, these peaks are usually of short duration and trail off rapidly. Absence of change in titer in a month of observation is strongly suggestive of syphilis but is not in itself absolutely diagnostic. In the absence of other positive evidence of syphilis it is considered advisable to follow the blood serologic titer for a period of at least three or four months before coming to a final decision or instituting therapy.

In the present instance symptoms requiring treatment were present; it is to be presumed that the physical examination and ratory tests ruled out other diseases as far as it is possible to do so, under which circumstance the treatment given certainly seems justified. The articles by Moore, Eagle and Mohr (Suggested Method of Approach to Clinical Study of Biologic False Positive Test for Syphilis (The Journal, Nov. 9, 1940, p. 1602) and Beerman's more recent review (Biologic False Positive Reactions to the Test for Syphilis, *Am. J. M. Sc.* **209**:525 [April], **210**:524 [Oct.] 1945) are particularly good in giving the points which should be considered in ruling out the possibility of biologic false positive reaction.

Liver involvement from syphilis as far as it has been studied responds well to penicillin therapy. The article by Tucker and Dexter (Penicillin Treatment of Gummatous Hepatic Syphilis, *Arch. Int. Med.* **78**:313 [Sept.] 1946) should be consulted in this regard.

The clinical improvement in this case has apparently been satisfactory. The response of the serologic test is of less importance and will depend in large part on the stage of the disease when treatment was commenced, which is apparently unknown. The possibility of obtaining a negative serologic test will be good (at least a 70 to 80 per cent chance) if this is a recently acquired infection, but poor (not better than 50 per cent) if it is of long standing, irrespective of the type or amount of treatment. If the test does become negative as a result of treatment, the titer will gradually diminish and syphilis reagin will usually disappear from the blood some time between four and twelve months. If the patient is still seropositive at the end of one year, retreatment with at least the same and possibly with double the original dosage of penicillin could be considered.

Treatment other than this will depend largely on the confidence of the individual physician in the value of penicillin in the treatment of syphilis; here opinion varies because no one has used penicillin in cases such as described in sufficient numbers to come to a definite conclusion. There is some indication that the reinforcement of penicillin courses with metal chemotherapy is of value, but even this has not been well substantiated. Heavy metal therapy following a course of penicillin should be continued for at least eight to ten weeks. The treatment given this patient to date has been in accordance with accepted practice, and the penicillin dosage of 4.8 million units should be adequate according to our present knowledge, though some physicians give total dosages in the magnitude of 6 to 10 million units. The principal indication from now on is for periodic serologic tests using quantitative titer and physical reappraisal monthly for the next year and periodically thereafter for life. Additional treatment will have to be individualized and based on further developments.

MANOMETER FOR SPINAL FLUID PRESSURE

To the Editor:—Recently I bought a mercury spinal manometer. A few days later a neurologist told me that only the water manometer is reliable in recording cerebrospinal fluid dynamics. Is that true? What is the comparative efficiency between the mercury and the water manometer?

M.D., Pennsylvania.

Answer.—The water manometer is far superior to the mercury manometer for measuring spinal fluid pressures. This is true for several reasons. It is much easier to keep clean and is more readily sterilized. With the mercury manometer there are portions which cannot be sterilized, and the danger of contamination in using these parts is always present. Furthermore, the fluctuations on the mercury manometer are much less extensive than with the water manometer in view of the fact that mercury is some thirteen times heavier than water. For the same reason the responses to changes in pressure are registered much more slowly with the mercury manometer. There is no longer any excuse for using such an inefficient and unsatisfactory apparatus as the mercury spinal manometer. The aneroid spinal manometer, which is seldom seen in this country, is as unsatisfactory as the mercury manometer.

WATER SOFTENING CHEMICALS AND DERMATITIS

To the Editor:—Please give me information concerning the possibility of commercial water softening chemicals causing dermatitis or pruritus vulvae or pruritus ani.

M.D., Missouri.

Answer.—Chemicals used for softening water are usually fairly strong alkalis. Sodium carbonate, trisodium phosphate, ammonium carbonate, sodium metaphosphate, sodium metaborate, sodium phosphate, sodium aluminate and sodium hexametaphosphate are some of the chemicals most often found in water softeners.

Some special formulas also contain sodium silicate, calcium chloride and sodium fluoride. Many of these chemicals are primary irritants in powder or granular form and in strong solution. When used to soften water they are used in proportions of the order of 1:1,000 or 1:10,000, depending on the "hardness" of the water. Such dilutions should not cause the symptoms described except perhaps in those who are extremely sensitive.

It is possible to carry the powdered softeners to the vulva and anus by contaminated fingers. It is also possible that underclothes washed in strong solutions of the softeners may retain a sufficient amount to cause skin irritation.

FLUID INTAKE IN CONGESTIVE HEART FAILURE

To the Editor: I read the article by Wheeler, Bridges and White in The Journal of Jan. 4, 1947 with interest. With regard to the treatment of congestive heart failure with a diet low in salt and liberal intake of water, I believe that the restriction of liquid in heart failure is based on the belief that the work of the heart is thus reduced—a kind of heart rest prescription. Would you please discuss this physiopathologic question?

M.D., Lisbon, Portugal.

Answer.—Undoubtedly the chief two reasons for the traditional restriction of fluid intake in the presence of congestive heart failure have been (1) the fear of further water-logging and (2) the extra work for the heart in pumping additional fluid. However, both these fears have proved unjustified. In the first place, the difficulty is brine-logging and not water-logging, and, secondly, there seems to have been no difficulty, so far as the additional work of the heart is concerned, by the giving of a considerable amount of fluid daily to patients with congestive heart failure provided the sodium intake is kept low. The extraordinary ability of the circulation to handle considerable amounts of fluid taken in, in the face of congestive heart failure, has been an agreeable surprise to most of those interested in the subject.

PHYSICAL THERAPY FOR HEAD INJURIES

To the Editor:—In injuries of the head there have been various opinions as to the value of physical therapy. Some neurologists favor it; others do not. If it is indicated, what form of physical therapy is desirable? I have in mind chronic cases initiated by a contusion of the head, with or without a concussion. In fractures of various parts of the extremities and back, infra-red and short wave is a standard form of treatment. Should it be given in fractures of the skull?

Nathan Tandet, M.D., New York.

Answer.—This question is hardly specific enough to permit a brief answer. To ask about the value of "physical therapy" is comparable to asking about "the value of medicine" or "the value of surgery."

Physical agents employed in the expanding field of physical medicine are so varied that it is impossible to describe all of them and to discuss the possibilities of their employment in injuries of the head. Applications of heat in the form of infra-red radiation or short wave diathermy to simple contusions of the head may be made, as is the case with contusions in other regions of the body twenty-four to forty-eight hours after injury.

Superficial applications of heat are employed sometimes in the management of fractures of the extremities largely to overcome impairment of function in the surrounding muscles and tendons which may have been damaged incidentally. In fractures of the skull, such impairment of function of muscles and tendons does not usually exist. Intensive heating of bony tissue in any region may delay union of fractures. Therefore applications of heat in fractures of the skull are indicated less frequently than in fractures of the extremities.

CORRECTION

Vaginal Douching.—In the letter to the Editor entitled "Vaginal Douching," from Dr. Karl J. Karnaky in Queries and Minor Notes, The Journal, Aug. 16, 1947, p. 1446, the figures for the number of "times less (or more) acid than normal" were incorrect. The correct figures are given in the tabulation below, together with the *p*H values reported in the letter. These figures are based on the relative hydrogen ion concentrations of the vaginal mucosa as calculated from the *p*H values reported.

*p*H	Acidity Relative to Normal (*p*H = 4.36) (Ratio of Hydrogen Ion Concentrations)
4.36 (normal)	1.00
4.49	1.35 times less acid
6.00	43.70 times less acid
5.59	17.00 times less acid
6.61	177.50 times less acid
5.62	18.20 times less acid
4.57	1.62 times less acid
7.45	1,230.00 times less acid
6.72	228.50 times less acid
4.20	1.44 times more acid

The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

Vol. 135, No. 5 | Chicago, Illinois | October 4, 1947

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THE PRESENT STATUS OF ANESTHESIOLOGY AS A SPECIALTY

Chairman's Address

CHARLES F. McCUSKEY, M.D.
Los Angeles

Anesthesiology has developed slowly into a medical specialty. Before the establishment of the American Board of Anesthesiology the physician who devoted his full time and effort to the practice and advancement of anesthesia as part of the practice of medicine was rare except in a few localities. The New York Society of Anesthesiology and International Anesthesia Research Society contributed much to the development of this specialty by helping to bring together and unite anesthesiologists in the American Society of Anesthesiologists. With the formation of the American Board of Anesthesiology and the Section on Anesthesiology of the American Medical Association the specialty has been firmly established in the practice of medicine. Much remains to be accomplished before it reaches full maturity.

The excellent work of anesthesiologists in the recent war in reducing mortality through proper care in the operating room has been reflected in the present demand for anesthesiologists in civilian practice. To supply this demand with trained qualified specialists is one of the urgent tasks at present. As this immediate demand is met, it will create new demands for universal recognition of the part of the anesthesiologist in the medical world, which awaits only demonstration of his service.

At present there are 337 diplomates of the American Board of Anesthesiology and 261 fellows in Anesthesiology of the American Society of Anesthesiologists. This does not mean 598 diplomates or fellows, because many members of this group hold dual certification. There are 2,400 members of the American Society of Anesthesiologists. Many of these do not limit their practice to anesthesiology, and some do not practice at all but are engaged in teaching the basic sciences or in research. The American Medical Association has approved 102 hospitals for the training each year of a total of 366 residents in anesthesia. Against this small total of actual and potential anesthesiologists there is a total of 6,280 hospitals in the United States. Of this number, those classified as general hospitals, children's hospitals, orthopedic hospitals, eye, ear, nose and throat hospitals and tuberculosis hospitals total 5,278. The majority of these 5,278 hospitals are without proper or adequate coverage by anesthesiologists. The situation is further complicated by the fact that a concentration of anesthesiologists exists in the larger cities and in teaching centers.

With this tremendous potential need for the services of anesthesiologists a large number of young physicians should be turning toward this specialty. However, this is not the case. Some of the factors that may be responsible are as follows: 1. The importance of anesthesia in the surgical care of the patient is not stressed in the medical schools, and the majority of medical students are not given adequate instruction in the basic principles and problems of anesthesia. 2. Because of the lack of anesthesiologists in most communities, anesthetics have been given by general practitioners, surgeons and technicians. Interns who receive training in these hospitals are never exposed to the practice of anesthesiology in its best form and hence are not attracted to it. 3. The surgeons in localities where there are no anesthesiologists are responsible for anesthesia as well as for surgery. This situation has tended to suppress anesthesiology as a separate specialty. 4. Because anesthesia in many localities is given largely by trained technicians hired by the hospital the physician has not been given any particular financial inducement to practice this specialty. The profit accruing to hospitals from the use of technicians has caused some hospital administrators to oppose the use of the anesthesiologist who is a medical specialist despite the fact that physicians can give the patient better medical care.

These then are some of the obstacles confronting anesthesiology as a specialty at present. Many surgeons because of these factors have never seen good anesthesia. Therefore they do not demand it or expect it. The younger surgeons who have been in the army or navy are just now beginning to voice their discontent with the present situation.

On the other side, let me consider some of the more favorable factors. Despite obstacles, inertia and discouragement anesthesiology is a growing specialty. It has grown slowly to the present, but everything indicates that its growth will be rapid in the future. In many centers it is an active specialty, the value of which has been firmly established through the efforts of a few teachers and excellent clinicians. Younger men have developed in these localities, and they in turn are becoming the nucleus for future centers. Surgeons who have been in the services and have had the benefit of an anesthesiologist as a consultant and co-worker are making maximal use of such specialists in their localities and doing much to foster and encourage them to locate in communities in which they are not as yet prevalent. Members of hospital staffs are insisting that anesthesiologists be secured to give the patients the maximal possible benefits of good surgical care. Resi-

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[*] Read before the Section on Anesthesiology at the Ninety-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., June 12, 1947.

s who have finished with their training in anesthesiology are in great demand and become established rapidly and successfully. Many of these physicians have been started on their careers in anesthesiology in the army or navy and have continued in this specialty because they realize its future. That so many have remained is proof that if an adequate understanding of the field develops one of the major problems of the specialty is solved.

I have considered some of the adverse and some of the brighter aspects facing the anesthesiologist, and now I wish to consider what more can be done to improve the specialty and to advance it. It seems to me that each anesthesiologist must be a teacher. He must teach surgeons, residents, interns, medical students, nurses and the laity what he represents and what he can do to lessen the burden of illness for the patient. The anesthesiologist must also be a clinical physiologist. It is not enough for him to be highly skilled in the art and science of anesthesia; he must appreciate and take into account the variables that each patient presents as a physiologic entity. The anesthesiologist, of course, should always be a physician. As such he takes the personal interest in each case that is characteristic of the practice of medicine as it is fostered by the American Medical Association.

305 Westlake Avenue.

CARCINOMA OF THE STOMACH

A Ten Year Survey (1936 to 1945 Inclusive) of Early and Late Results of Surgical Treatment at the University of Minnesota Hospitals

DAVID STATE, M.D.
GEORGE MOORE, M.D.
and
OWEN H. WANGENSTEEN, M.D.
Minneapolis

Cancer ranks second only to cardiovascular disease as the commonest cause of death in this country. Of all deaths due to carcinoma, one fourth to one third are due to gastric cancer. As the age of the population increases, the number of persons who die from gastric carcinoma will also grow larger, so that by 1960 it has been estimated that 40,000 patients will succumb to gastric carcinoma annually.[1]

The very frequency of gastric cancer suggests that any approach to the problem of reducing the death rate from malignant growths must include a serious consideration of how the number of persons who die from gastric cancer may be diminished.

In the course of outlining a study to determine likely precursor groups of gastric carcinoma,[2] it was considered that the results of therapy of this disease at this institution during the preceding ten years should be determined so as to provide a basis for comparison with future studies.

REVIEW OF THE LITERATURE

An exhaustive review of the world literature on the end results of treatment of gastric carcinoma up to 1937 has been compiled by Livingston and Pack.[3] The large experience of the Mayo Clinic has been summarized by Walters, Gray and Priestley.[4] More recently Maimon and Palmer,[5] in addition to summarizing and analyzing their results at the University of Chicago, have brought the literature on this topic up to date. These authors have called attention to wide variations in the published data from various institutions and have emphasized the need of analyzing all published statistics with respect to four factors: (*a*) the total number of patients with gastric cancer; (*b*) the number of patients subjected to operation; (*c*) the number of patients in which a gastric resection was done, and (*d*) the number of survivors in relation to the total.

Our data analyzed according to these headings are herewith presented.

OBSERVATIONS

(*a*) *Total Number of Patients with Gastric Carcinoma.*—The total number of patients with gastric carcinoma seen at the University of Minnesota Hospitals over the ten year period studied (1936 to 1945) was 586. Of these, 432 were men and 154 women. The average age (chart 1) was 63.2 years. Of this group, 19 patients were in terminal stages of their disease when first seen but are included in the statistical data.

(*b*) *The Number of Patients Subjected to Operative Intervention.*—The number of patients operated on was 447, an operability rate of 76.3 per cent (table 1).

If the 19 patients who were in terminal stages on admission are excluded, the operability rate becomes 79 per cent. In this group of 447 patients 85 (14.5 per cent) had exploratory laparotomy only, 25 (4.3 per cent) had gastrojejunostomy and 30 (5.1 per cent) had enterostomy.

(*c*) *The Number of Patients in Whom Gastric Resection Was Accomplished.*—Three hundred and seven patients underwent gastric resection, a resectability rate of 52.2 per cent. In this group there were 31 total gastric resections and 276 partial resections. The resectability rate based on the total number of patients studied was 52.2 per cent, but when determined on the basis of those subjected to laparotomy (447) it was 68 per cent.

Postoperative Mortality.—There were 307 gastric resections (table 1) with 51 deaths, a mortality of 16.6 per cent. There were 276 partial gastric resections with an operative mortality of 15.2 per cent and 31 total gastric resections with an operative mortality of 30 per cent. We have not subdivided our cases of gastric resections into those which were simple and those which were more complicated. Sixty-five per cent of all resected cases, however, had metastases to the regional lymph node and/or extension of the carcinoma to other organs, necessitating extensive surgical procedures.

Those operative procedures which were purely palliative carried with them a not insignificant mortality.

Read before the Section on Surgery, General and Abdominal, at the Ninety-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., June 11, 1947.

From the Department of Surgery, University of Minnesota Medical School. The work reported here was supported by grants of the Jane Coffin Childs Fund for Cancer Research, the National Cancer Institute Fund, the Flora L. Rosenblatt Fund for Cancer Research and the Malignant Disease Research Fund.

[1] Dublin, L. I.: A Statistical Analysis of the Mortality from Cancer: Some Fundamental Aspects of the Cancer Problem, New York Science Press Printing Company, 1937, p. 237.

[2] State, D.; Varco, R. L., and Wangensteen, O. H.: A Study to Determine Likely Precursors of Gastric Cancer, J. Nat. Cancer Inst., to be published.

[3] Livingston, E. M., and Pack, G. T.: End Results in the Treatment of Gastric Cancer, New York, Paul B. Hoeber, Inc., 1939.

[4] Walters, W.; Gray, H., and Priestley, J.: Carcinoma and Other Malignant Lesions of the Stomach, Philadelphia, W. B. Saunders Company, 1942.

[5] Maimon, S. N., and Palmer, W. L.: Gastric Cancer: Laparotomy, Resectability and Mortality, Surg., Gynec. & Obst. 83: 180, 1946.

There were 85 exploratory laparotomies performed with a mortality rate of 8.2 per cent, 25 gastrojejunostomies with a mortality rate of 24 per cent and 30 enterostomies with a mortality rate of 13.4 per cent. These high figures are similar to those reported by other authors (Maimon and Palmer,[5] Livingston and Pack[3] and Anschütz[6]), and since the degree of palliation by operative procedures other than gastric resection is so small (vide infra), it is obviously desirable to perform a gastric resection even for palliation whenever feasible.

Causes of Postoperative Mortality After Gastrectomy.—There were 51 deaths after gastric resection, and it was possible to obtain autopsies in 44 of these cases. The major cause of death (table 2) was peritonitis, which accounted for 28 fatalities. Eight patients succumbed to pulmonary complications (atelectasis and pneumonia); 4 died of cardiac failure, 3 of renal complications, 2 of pulmonary embolism, 1 of a cerebrovascular accident and 1 of shock; in 4 cases the cause of death was undetermined.

It is not surprising to note that the most frequent cause of death after operation was peritonitis. Whereas the closed method of gastric resection was begun in this clinic in 1938, it was not until 1940[7] that every member of the surgical staff was employing the method. Moreover, it probably should also be said that every surgeon trained in this clinic since the closed method of resection was adopted has remained an advocate of the closed anastomosis.

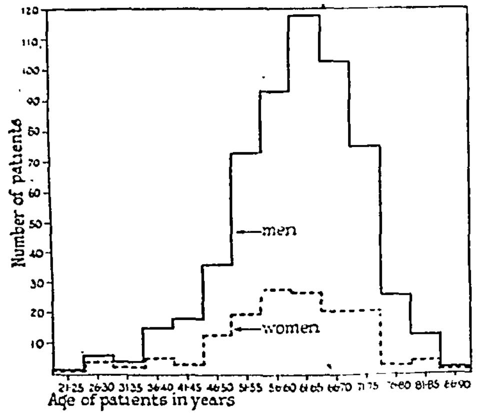

Chart 1.—Age and sex incidence of carcinoma of the stomach.

Since 1940 peritonitis has been infrequent indeed after simple gastric resection for cancer. The majority of the instances occurred after total gastrectomy or after complicated gastric resection which necessitated simultaneous excision of adjacent organs such as liver, pancreas and the colon. One patient died of a biliary peritonitis; at operation the gallbladder had been excised together with the gastric cancer. At autopsy the source of the leak of bile could not be demonstrated, but it was believed to have occurred from a small biliary duct in the hepatic margin adjacent to the wall of the gallbladder.

A baffling problem has been the management of the pancreas after partial division. In the main, most members of the surgical staff favor closure without drainage. Isolation and ligature of the pancreatic duct, employing a hand lens if need be to find it, is important. Approximation of the edge of the divided pancreas with a row of interrupted fine silk suture (0000) is regular practice, observing care to cut away all pancreatic tissue above the clamp. Finally, additional covering of the divided pancreas away from the gastrointestinal suture line is also important. Interestingly enough, after total gastrectomy with simultaneous division of the vagus nerves, less difficulty attending simultaneous resection of the pancreas seems to have occurred than after partial gastric resection. The preservation of the vagal trunks as well as partial retention of the secretal influence in partial gastric resection is probably responsible for this difference.

TABLE 1.—*Mortality of the Various Operative Procedures*

	No. of Patients	Per Cent of Total	Operative Mortality
Patients with no operation	133	23.7	
Laparotomy only	85	14.5	8.2
Palliative procedures:			
(*a*) Gastroenterostomy	25	4.3	24.0
(*b*) Enterostomy	30	5.1	13.4
Resections:			
(*a*) Partial	276	47.1	15.2
(*b*) Total	31	5.1	30.0
(*c*) All types	307	52.2	16.6
Total operations	447	76.3	17.9

The Fate of Patients Surviving Gastric Resection.—It was possible to determine the fate of each of the 307 patients subjected to gastric resection.[8] Two hundred and fifty-six patients survived operative treatment, but it is only those patients operated on prior to 1943 that one can speak of as three year cures; and only those patients operated on prior to 1942 can be considered 5 year cures. Table 3 *A* indicates the number of patients who survived for three years after gastric resection in the years 1936 to 1943. The percentage based on the total number of patients examined averages 10.7 per cent, but based on the number of those subjected to gastric resection the percentage of 3 year survivors reaches 29.4 per cent, with a high of 45 per cent for 1937. In all, 47 patients survived three years.

TABLE 2.—*Cause of Death Following Gastrectomy (All Types)* *

Peritonitis	28
Pulmonary complication	8
Cardiac failures	4
Renal complications	3
Pulmonary embolism	2
Cerebrovascular accident	1
Shock	1
Undetermined	4
Total	51

*Forty-four autopsies obtained.

Table 3 *B* indicates that 22 patients of the 328 patients seen between 1936 and 1941 inclusive survived five years, an incidence of 6.6 per cent based on the total number of patients seen. However, if calculated on

basis of those patients who survived resection (102 patients) the percentage of five year survivors becomes 21.5.

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[6] Anschütz, A., cited by Nielsen, A., and Hansen, S.: Indications and Results of Surgical Therapy of Gastric Cancer, Ugesk. f. læger **105**: 814, 1943.

[7] (*a*) Wangensteen, O. H.: Aseptic gastric resection: I. A Method of Aseptic Anastomosis Adaptable to Any Segment of the Alimentary Canal (Esophagus, Stomach, Small or Large Intestine); II. Including Preliminary Description of Subtotal Excision of the Acid Secreting Area for Ulcer, Surg., Gynec. & Obst. **70**: 58, 1940; (*b*) Aseptic Resections in the Gastro-Intestinal Tract, with Special Reference to Resection of the Stomach and Colon, ibid. **72**: 257, 1941.

[8] We are indebted to the referring physicians who responded to our requests for follow-up on patients and in particular to members of the Department of Vital Statistics of the Min[illegible] State Public Health Department who traced a *substantial n*[illegible] *patie*[illegible] *that our follow-up was complete.*

Lymphosarcoma of the Stomach.—In addition, 5 patients with gastric lymphosarcoma, not enumerated among those with carcinoma of the stomach, were treated at this clinic between 1936 and 1945. One patient was deemed inoperable at laparotomy and was given deep roentgen therapy following operation. The fate of this patient was not determined because he could not be traced. The remaining 4 patients underwent partial gastric resection. There was no operative mortality in this group. In addition to subtotal gastric resection, 1 patient had postoperative radiation therapy. She is alive and well, now nine years later. The other 3 patients did not receive radiation therapy. Two patients survived one year after operative treatment, and the third is alive and well five years after surgical therapy. This experience is in keeping with that of others, which suggests that the incidence of long time survivors is greater after gastric resection for lymphosarcoma than it is for carcinoma.

Table 3.—*Survival of Patients Operated On in the Years 1936 to 1943 Inclusive*

			A			B		
			Patients Surviving 3 Yr.			Patients Surviving 5 Yr.		
Year	Total No. of Patients	No. of Gastric Resections	No.	%	% of Those Surviving Gastrectomy	No.	%	% of Those Surviving Gastrectomy
1936	58	16	4	7.0	40.0	1	1.7	10.0
1937	47	17	5	10.0	45.0	4	8.5	30.7
1938	48	13	3	7.0	30.0	2	4.2	22.2
1939	47	20	3	6.0	23.0	3	6.4	23.1
1940	65	42	9	14.0	27 0	5	7.7	14.2
1941	63	28	7	11.0	44.0	7	11.1	3.3
1942	52	34	7	13.0	25.0			
1943	67	43	9	14.0	26.0			
Total	447	213	49	10.7	29.4	22	6.6	21.5

TREND IN OPERABILITY, RESECTABILITY AND MORTALITY OVER THE TEN YEAR PERIOD

Chart 2 indicates that from 1936 to 1945 there has been a definite increase in the operability and resectability rate and a pronounced drop in the postoperative mortality. Whereas in 1936 the operability, resectability and mortality rates were 57, 28 and 25 per cent, in 1945 these rates were 88, 80 and 4.9 per cent. If the resectability rate is determined on the basis of the number of patients explored, in 1936 it was 48 per cent whereas in 1945 it was 89.7 per cent. The mortality rate in 1945 is for both subtotal and total gastric resections. The mortality after partial gastric resection alone was 3.8 per cent. There were 9 total gastric resections in 1945 with 1 death, a mortality rate of 11.5 per cent. Thus, of the 58 patients examined in 1936 only 10 were given a chance at cure or palliation, while in 1945 of 77 patients seen 58 were given that chance. Approximately twenty different surgeons performed the gastric resections in the ten year period (1936 to 1945) studied. Similarly, the resections in 1945 were done not by any single individual or team but were performed by seven different members of the surgical staff.

Although comparison between the years 1936 and 1945 is striking, it can be observed that during the last four years the operability rate has been considerably higher than 80 per cent, and of those patients subjected to laparotomy an average of 76 per cent have been resected (chart 3).

The decrease in operative mortality since 1940 has been due, we believe,[9] to a number of factors such as (1) routine employment of the aseptic or closed method of gastric resection; (2) elimination of obstruction at the efferent outlet stoma as a postoperative complication; (3) better preoperative nutritional preparation of the patient; (4) improved postoperative care, including early ambulation; (5) better anesthesia, and (6) in the last few years, availability of antibiotics, especially penicillin.

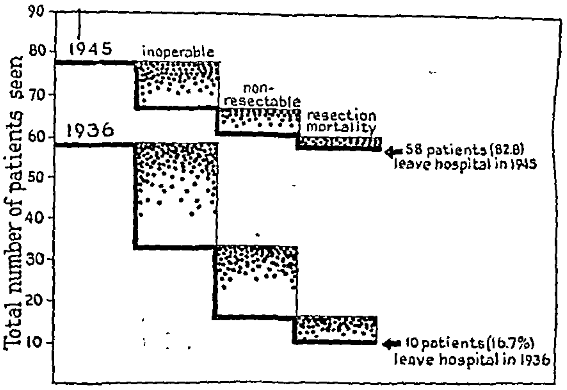

Chart 2.—Comparison of efficacy of surgical therapy of gastric carcinoma in 1936 and 1945.

PALLIATIVE OPERATIONS FOR CARCINOMA OF THE STOMACH

(*a*) *Gastrojejunostomy and Enterostomy.*—During the earlier periods of this study (1936 to 1938) 5 gastrojejunostomies were performed for feeding purposes in apparently operable lesions. In only 1 of these cases was a resection performed at a later date; the others on subsequent exploration (three months) were considered inoperable. In all, the average length of survival after the 25 gastrojejunostomies which were performed was 5.4 months. Enterostomy, which was done in 30 patients, offered only an average of 3.5 months of survival with little or no palliation.

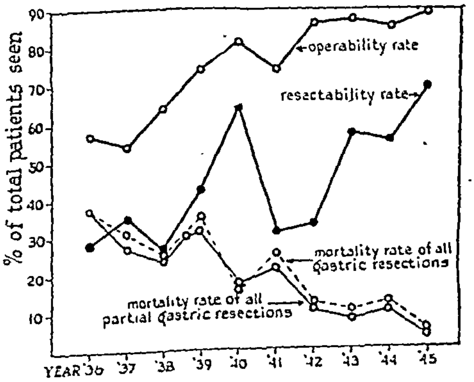

Chart 3.—Ten year trend of operability, resectability and mortality rates in the treatment of gastric carcinoma.

(*b*) *Gastric Resection.*—It is apparent that with the high resectability rate presented from this clinic, a large number of gastric resections were performed

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9. Wangensteen, O. H.: The Surgical Problem of Gastric Cancer, Arch. Surg. 46: 879, 1943.

not with the idea of curing the patient (because the extent of the carcinoma precluded this) but with the express purpose of offering worth while palliation. It is obvious that other palliative procedures such as gastrojejunostomy and enterostomy seldom benefit the patient at all, for the average survival of persons who do not have any treatment after the diagnosis of carcinoma of the stomach has been made is approximately three months. The number of months of palliation in those patients who survived gastric resection between the years 1936 and 1943 but subsequently expired from carcinoma of the stomach averaged approximately 22.4 months. In the main, the patients were reasonably comfortable during this interval up until a few weeks prior to their death. Sufficient time has not elapsed to permit the determination of the degree of palliation obtained in operations performed since 1943.

(*c*) *Palliation in Presence of Metastases of the Liver.*—Patients have had gastric resections for carcinoma even in spite of evident metastases of the liver. In most instances the resection was performed because of high grade obstruction to the gastric outlet. The average number of months of palliation has been much higher than we anticipated, namely fifteen months.

COMMENT

The Present Survey.—The trend in this clinic has been to increase the rate of operability and resectability, so that in 1945 the operability rate was 88 per cent and the resectability rate 79.6 per cent. These figures compare favorably with those published elsewhere, for the highest operability rate of 89.9 per cent was reported by Bocharov,[10] and the previous highest resectability rate of 44.6 per cent was published by Lahey.[11] A high operability and a high resection rate are of the greatest significance, for it is only when the patient is subjected to operative therapy and the tumor in the stomach is removed that he has a chance of survival. A low operability and resectability rate, even in the presence of an exceedingly low mortality rate, will do little to improve the end results of treatment directed at carcinoma of the stomach.

The postoperative mortality rate in this clinic has also decreased during the period of study, so that even in the presence of a rising operability and resectability rate the mortality after gastric resection (subtotal and total) for the last four years has been under 10 per cent and for 1945 was 4.9 per cent.

The patients who survived three and five years constitute only a small proportion of the patients seen. There can be no question, however, even if these patients be cured of their disease, that periods of palliation averaging up to 22.4 months constitute a worth while achievement for the patient. Surprising, too, have been the prolonged periods of palliation following gastric resection even in the presence of evident metastases of the liver (average survival fifteen months).

It is questionable whether the operability, resectability and mortality rates that have been reported for 1945 will be bettered appreciably in our hands. It becomes evident that the only way in which the end results may be improved is by earlier diagnosis. Livingston and Pack,[2] as well as Walters, Gray and Priestley[4] have shown that if gastric resection can be done when the carcinoma of the stomach is entirely confined to that organ, the five year survival rate reaches 55 per cent. Moreover, Berkson[12] has indicated that after five years the survival expectancy is the same as that for well persons of the same age. To attain consistently high rates of cure, it is evident that the surgeon must have access to patients in whom the disease has not made such extensive progress. From our experience with patients who have residual carcinoma in the proximal line of resection, following gastrectomy, there is an interval of approximately fifteen months before the patient has symptoms of recurrence; in some patients it is longer. This has led us to believe that carcinoma of the stomach may be a silent disease for a period of fifteen to twenty months; and for another four to six months the symptoms may be so vague that the patient fails to seek medical aid. Moreover, if he does, the physician may fail to think that there is need to obtain a roentgenogram of the stomach. In consequence the diagnosis toc often is delayed until the patient's chance of cure is poor.

Improvement in Operative Technics.—It is our impression that the more complete operation performed today routinely in this clinic for all operable gastric cancers will be followed by a somewhat larger number of long time survivors.[13] In such an operation the following factors are important: (1) extensive excision of the stomach with complete removal of the entire lesser curvature together with a segment of the duodenum and (2) excision of the greater omentum as well as the entire gastrohepatic omentum, including that segment of it which envelops the right side of the subdiaphragmatic esophagus. In lesions with local extensions to other organs such as the pancreas, transverse mesocolon or colon, simultaneous excision of such involved structures is indicated. Whether total gastrectomy will improve materially the results of operation remains to be shown. To be certain, if recurrence in the residual gastric pouch were a common sequel of subtotal gastric resection for cancer, Longmire's[14] suggestion of substituting total gastrectomy for partial gastric resection would be well worth heeding. Moreover, the operation of total gastrectomy can now be performed in practiced hands with a reasonable mortality. By the employment of the simple expedient of anchoring the posterior esophageal wall to the jejunum by two rows of interrupted silk sutures, the first row being placed at the mesenteric border of the jejunum,[13a] a firm buttress for the additional anastomotic row of sutures is obtained. When the anterior suture is completed the use of the anterior peritoneal flap described by Lahey[15] (1938) together with the posterior esophagojejunal fixation insures complete covering (extraperitonealization) of the anastomosis.

Tardiness of Diagnosis.—Measured against the broad background of gastric cancer, the increased salvage of life which will result from improvements in operative technics probably will not be large. It is perhaps permissible to suggest, however, that the only optimistic feature of the present outlook in the problem of gastric gnancy is what can be done surgically for those ho suffer from gastric cancer. The surgeon's lament is that he sees too many patients too late. Yet this is the complaint of every surgeon dealing with malignant visceral growths. It has taken a long time to bring surgical practice to its present level of accomplishment, as this year, marking the Centennial of the origin of the American Medical Association, suggests. Looking back, mindful of the items that have made the surgical treatment of visceral cancer not alone possible but safe, one cannot help but ask, why did it take so long? Discovery is a slow and painstaking process, in which every increment of gain in knowledge in one art or science is dependent on similar gains in related fields.

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[10] Bocharov, A. A.: Gastric Cancer, Am. Rev. Soviet Med. **1**: 53, 1944.

[11] Lahey, F. H.: Cancer: A Manual for Practitioners, Boston, Rumford Press, 1940, p. 103.

[12] Berkson, Jim; Walters, Gray and Priestley,[4] chap. 22.

[13] (*a*) Wangensteen, O. H.: The Problem of Gastric Cancer, J. A. M. A. **134**: 1161 (Aug. 2) 1947. (*b*) Wangensteen.[9] Lahey.[11]

[14] Longmire, W. P., Jr.: Total Gastrectomy for Carcinoma of the Stomach, Surg., Gynec. & Obst. **84**: 21, 1947.

[15] Lahey, F. H.: Complete Removal of the Stomach for Malignancy with the Report of Five Surgically Successful Cases, Surg., Gynec & Obst. **67**: 212, 1938.

However much we have occasion to deplore the tardiness of diagnosis of gastric cancer, the general improvement which has attended the efforts of the surgeon in his wrestle with the hazards of operation should cause us to have more patience with our own inability to diagnose gastric cancer early. Visceral cancer is a silent disease. Although we lament that patients fail to heed the onset of symptoms, our primary concern in the detection of gastric cancer should be with the circumstance that visceral cancer is a silent disease. The interval of transition in the cells of a mucous membrane or epithelial surface from the normal to a [illegible]nt state is a slow and gradual process, as sug[illegible] the observations of Broders[16] for several types of malignant tumors and by Mallory[17] for gastric neoplasms; moreover, symptoms ordinarily are delayed till the invasive phase of the malignant transformation begins to compromise the function of the organ involved.

Cancer Detection Clinics.—With the knowledge of these facts and circumstances, and mindful of the alarmingly frequent incidence of visceral malignancy, and in particular of gastric cancer, it would appear that the only helpful method of recognizing visceral cancer earlier would be to examine periodically by the most precise means available a population believed to be normal, beginning at that time of life when visceral cancer is definitely on the increase. Autopsy figures suggest that 1 woman in 20 beyond 40 years of age will die of gastric cancer and that 1 of 12 men past 50 years of age will fall victim to the ravages of cancer of the stomach.[18]

A few pilot plants set up as Cancer Detection Clinics could probably determine within the space of five years the efficacy of available diagnostic agents in disclosing the presence of silent cancers in persons who do not recognize that they are ill. Obviously the time has not yet come to explore this thesis on a wide base. There are numerous persons who decry this approach to the problem as involving much labor and cost and little reward. To many, this prospect appears even less promising than David setting out against Goliath with a sling shot. Those armchair philosophers would prefer to wait till the dreams of a discerning Joseph or a Daniel divine new approaches to the detection of gastric cancer.

The surgeon who has made visceral cancer his concern is not a person to be readily dismayed. If as great an advance can be made in the early detection of gastric cancer during the next decade as has occurred in its surgical management during the last ten years, the members of the medical profession will have good reason to feel hopeful that a brighter day is dawning for the sufferer from gastric cancer. The surgeon knows from his own experience that consistently earlier diagnosis would change completely for the better the present dismal outlook in visceral cancer.

In this clinic we have been examining over a two year interval the likelihood of uncovering in the outpatient population of a University Hospital Dispensary patients who harbor precursors of gastric cancer.[2] In this group have been included (1) all men and women over the age of 50 with (*a*) histamine achlorhydria or hypochlorhydria (less than 30 degrees free acid), (*b*) unexplained anemia (less than 10 Gm. hemoglobin per hundred cubic centimeters) and (*c*) occult blood in the stool; (2) the relatives of patients with gastric carcinoma; (3) all patients, regardless of age, with pernicious anemia, and (4) patients with gastric polyps. (5) The patient with free hydrochloric acid and a defect believed to be a gastric ulcer belongs in this precursor group, in that it is virtually impossible in many instances to determine whether the lesion is benign or malignant. Up to Nov. 1, 1946, 1,253 patients were subjected to gastric analysis employing histamine, and of this number 691 fell into the precursor group study. Roentgenograms were obtained in 575 patients, and 2 silent carcinomas and 15 gastric polyps were found. Moreover, the silent gastric cancers disclosed were not early lesions. The most promising aspect of the study would appear to be the location of the gastric polyps, some of which will undoubtedly become malignant with the elapse of time.

SUMMARY

1. Over a ten year period (1936 to 1945 inclusive) 586 patients with gastric carcinoma were seen in this clinic. Nineteen were in terminal stages of the disease when first seen.

2. Four hundred and forty-seven of this group of 586 patients were operated on, an operability rate of 76.3 per cent.

3. Gastric resection was performed in 307 patients; in 31 a total gastric resection was done, and in 276 a partial gastric resection was accomplished. The resectability rate based on the total number of patients seen (586) was 52.2 per cent, but based on the number of persons explored (447) it was 68 per cent. The previous highest resectability rate was 44.6 per cent reported by Lahey[11] (1940).

4. The mortality for all gastric resections was 16.6 per cent. For partial resections it was 15.2 per cent, and for total gastric resections it was 30 per cent.

5. The chief causes of death postoperatively were (in order of frequency) peritonitis, pulmonary complications, cardiac failure, renal complications and pulmonary embolus. In 4 instances the cause of death was undetermined.

6. Because sufficient time has not elapsed, the percentage of patients surviving three and five years can only be determined in relation to those patients operated on in the periods 1936 to 1943 and 1936 to 1941. The percentage of patients surviving three years after gas-

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16. Broders, A. C.: Carcinoma in Situ Contrasted with Benign Penetrating Epithelium, J. A. M. A. **99**: 1670 (Nov. 12) 1932.

17. Mallory, T. B.: Carcinoma in Situ of the Stomach and Its Bearing on the Histogenesis of Malignant Ulcers, Arch Path. **30**: 348 (July) 1940.

18. (*a*) Berman, L.: Cancer as a Cause of Death in the University of Minnesota Necropsy Collection, M. S. Thesis in Pathology, University of Minnesota, June 1940. (*b*) Dormanns, E.: Die vergleichende geographisch-pathologische Reichs-Carcinomstatistik 1925-1933, Ztschr. f. Krebsforsch. **45**: 471, 1947.

trectomy was 10.7 per cent, but based on the number of patients subjected to gastric resection it was 29.4 per cent. The percentage of patients surviving five years was 6.6 per cent, but determined on the basis of the number of patients surviving gastric resection it was 21.5 per cent.

7. Gastric resection was the only palliative procedure of value. The average number of months of palliation following gastric resection was approximately twenty-two. The patients in the main were comfortable up to the last few weeks before their death.

8. The operability and resectability during the ten years of study have increased steadily, while the mortality has decreased markedly. In 1936 the operability and resectability rates were 57 per cent and 28 per cent, whereas in 1945 these rates were, respectively, 88 and 80 per cent. The resectability rate for 1945 based on the number of patients explored was 89.7 per cent. The mortality rate for partial gastric resection in 1936 was 25 per cent, while in 1945 it was 4.9 per cent, which figure includes both total and subtotal gastrectomy.

CONCLUSIONS

1. Gastric resection remains the only mode of treatment capable of curing gastric carcinoma.

2. In spite of an increasing rate of operability and resectability and a decreasing mortality rate, the total number of patients cured of gastric cancer remains limited. In a series such as this, in which the number of palliative resections is large, the percentile of ultimate cures in the resection group obviously will be lower than if the indications for resection had been more conservative. The longest possible extension of life, however, results from employment of liberal interpretation of justifiable indications for even palliative resection. And until earlier recognition of gastric cancer makes curative operations more frequent, surgeons must continue to offer temporary relief when the hope of lasting cure is gone.

3. In order to increase appreciably the number of patients cured of gastric carcinoma, it is mandatory that the diagnosis be made at an earlier period than it is being made now. Efforts at detection of gastric visceral cancer, though they involve much labor and cost and little immediate prospect of reward, should be encouraged, for until our knowledge of the origins of cancer teaches us how to prevent or arrest its development, the only manner in which an important impact can be made on the problem in our own generation is through the agency of earlier diagnosis.

ABSTRACT OF DISCUSSION

Dr. George T. Pack, New York: At the Memorial Hospital, Dr. Gordon McNeer and I analyzed the results of treatment of gastric cancer during the same decade, and our statistical data are practically identical with those furnished by Dr. Wangensteen. The statistics from the Memorial Hospital represent the operative mortality for all cases including the junior attending and resident staff. The high mortality rate consequent to gastroenterostomy for cancer is universal throughout the world. It is usually greater than the rate for resection because of the more advanced stage of the disease. Of our patients surviving gastric resection for cancer more than five years, in only 1 did a recurrence develop, which unusual fact is not in keeping with the frequency of recurrence of cancer after five years in other regional and histologic types. In the table listing the cause of operative deaths Dr. Wangensteen, who is the leading advocate of the closed or aseptic method of anastomosis after gastrectomy, has given peritonitis as the most frequent cause of death. At the Memorial Hospital the commonest fatal complications were of pulmonary and cardiovascular nature. Peritonitis has been a relatively infrequent, although important, cause, and yet we use the open method of anastomosis as a routine procedure. Dr. Wangensteen's figure for resectability is 52 per cent, which is 17 per cent higher than our resectability rate of 35 per cent. Yet our data would indicate that we have not been selective in a relative sense, because 18 per cent of the resections were total gastrectomies and 17 per cent were transthoracic cardiectomies, a total of 35 per cent of all resections being of this radical character. We have unhesitatingly removed contiguous organs involved by the gastric cancer, e. g., the spleen, left hepatic lobe, pancreas and transverse colon.

Comparison of Statistical Data

	Dr. Wangensteen and Associates	Drs. Pack and McNeer
	10 Year Period	
Number of gastric cancers	586	683
Operability	76 %	79 %
Resectability	52 %	35 %
Operative mortality Resection	16.6%	Subtotal 12.2% Total 30 %
Operative mortality Gastroenterostomy	24 %	12.5%
Resection survivors 5 years	21.5%	34.7%
Total gastrectomy	10 %	18.3% Radical
Transthoracic cardiectomy	None listed	17.0% procedures

Dr. Waltman Walters, Rochester, Minn.: One of the contributions which Dr. Wangensteen and his associates have made in their paper is that as one's interest in the field of gastric surgery increases, the number of patients subjected to operation increases. The resectability rate will increase, and also the number of patients who undergo resection in relation to the total number examined will increase. Their contribution did a great deal to advance improvement in the treatment of patients with cancer of the stomach with respect to both recognition and more extensive resection. They showed how unsatisfactory were the results when but few operations were performed in comparison to those in which large numbers of patients were operated on by the individual surgeon. The more operations a surgeon performs, the lower will be the mortality rate associated with the type of operation in question and probably, within certain limits, the higher will be the curability rate. Dr. Wangensteen stressed that one of the important factors is early recognition of the lesions. In a large series of cases of cancer of the stomach which my colleagues and I reported in 1939, we were astonished to find (these were cases of proved cancer of the stomach) that a third of the entire group had a history of ulcer and had been treated for suspected ulcers. Of that group of patients with cancer and histories suggestive of ulcer who had been treated according to the suspected diagnosis of benign lesions, 80 per cent manifested an effective clinical response as measured by relief of pain. I am sure that this relief of pain delayed greatly the recognition that a carcinoma of the stomach was present. Sometimes this error is not entirely the fault of the examining physician, for it may be due to errors in interpretation of the roentgenograms of the stomach. In this series to which I have referred, ulcer had been reported in 10 per cent of the malignant lesions; an unspecified type of gastric lesion had been reported in 13 per cent of such lesions; there was an error of 1 per cent where the lesion was not recognized roentgenographically. These figures give rise to considerable speculation, for if the roentgenologist fails to see but 1 per cent of all gastric lesions it emphasizes what Dr. Wangensteen said regarding the desirability of such an examination in the group of persons to whom he referred. Moreover, it illustrates that a roentgenologic report of a gastric ulcer doesn't exclude its being a carcinoma.

HOMOLOGOUS SERUM JAUNDICE IN RECIPIENTS OF POOLED PLASMA

I. JAY BRIGHTMAN, M.D.
and
ROBERT F. KORNS, M.D.
Albany, N. Y.

The ready availability of pooled plasma, whether secured through commercial channels, state departments of health or local blood bank programs, has been a boon to medical practice. However, the fact that plasma may carry a virus capable of inducing hepatitis in the recipient has created a new public health problem of major importance.

The occurrence of homologous serum jaundice in recipients of blood and of blood derivatives has been reported by many investigators in both civilian and military fields. In a recent review Neefe[1] has presented an excellent description of both infectious hepatitis and homologous serum jaundice, and his list of references is extensive. The present study was designed to evaluate the risk of homologous serum jaundice inherent in the utilization of the dried pooled plasma which is now being distributed to meet civilian needs.

TABLE 1.—*Availability of Plasma Recipients for Follow-Up to Determine Incidence of Homologous Serum Jaundice*

Total plasma recipients in random sample	924	
Recipients eliminated	275	
Died within 30 days of transfusion		112
Unable to locate		107
Physician refused to supply information or permit home visit		40
Jaundice attributable to other cause		16
Recipients included in study	649	
Died between 1 and 6 months after transfusion without the development of jaundice		44
Survived 6 months or more, or died from homologous serum jaundice		605

TABLE 2.—*Incidence of Jaundice in Plasma Recipients and Their Household Contacts During Period Between One and Six Months After Transfusion*

	Total	Jaundice Number	Jaundice Percentage
Plasma recipients	649	29	4.5
Household contacts	1,597*	0	0.0

* Includes 56 contacts of the 29 plasma recipients in whom jaundice developed.

The problem was approached through two avenues. Part A: A follow-up study was made on a series of patients six or more months after the administration of pooled plasma to determine the subsequent incidence of homologous serum jaundice and the mortality therefrom. Part B: An investigation was made of a group of persons reported to have died of acute hepatitis in order to determine the number of those in whom previous administration of either plasma or blood may have been responsible.

PART A: FOLLOW-UP OF PLASMA RECIPIENTS

1. *Method of Study.*—The patients included in part A of this study, the follow-up of plasma recipients, had received transfusions with the dried pooled plasma which has been released by the American Red Cross and is now being distributed by the New York State Department of Health. In Upstate New York (New York state exclusive of New York city) physicians are requested to submit reports after the administration of each unit of this plasma, giving the name and other identifying data concerning the recipient, the lot number of the unit, the date of administration, the indication for the transfusion and any resulting immediate reactions. For the purpose of follow-up to determine the incidence of subsequent jaundice, 924 recipients named in these reports were selected at random, the only requirement being that six or more months must have elapsed since the transfusion of plasma.

In the majority of instances a letter was sent to the physician who had attended the patient at the time of the original illness; information was requested with regard to the patient's course subsequent to the transfusion of plasma, and he was asked for permission for the public health nurse to make a home visit. This home visit was a most essential part of the study and accounted for the disclosure of the majority of cases of homologous serum jaundice. Cases in which the physician refused to grant permission for such a visit were eliminated from the study unless he submitted specific evidence that he had full knowledge of the patient's course. In many instances in which the physician allowed the home visit although he indicated that the patient was still under his care and had not developed jaundice, the nurse's visit revealed that jaundice had occurred and that another physician had been in attendance. In such cases the name of the second physician was obtained from the patient or the member of the family who was interviewed, and the clinical data were secured from him.

Another important purpose of the home visit was to obtain data on the incidence of jaundice among the household contacts of the recipient. If infectious hepatitis had occurred among such contacts, it would be difficult to attribute a similar syndrome in the recipient to the administration of plasma.

No home visits were made in instances in which patients were known to have died. When death had occurred between one and six months after the transfusion, a letter was forwarded to the physician who attended the patient during the final illness, to inquire whether any syndrome suggestive of homologous serum jaundice had occurred and, if so, whether it had been a primary or contributory cause of death. Patients dying within one month of the transfusion were eliminated from the study.

The criterion established for the diagnosis of homologous serum jaundice was a bed-confining illness associated with clinical manifestations of acute hepatitis including jaundice, not accounted for by other recognized pathologic conditions and occurring between one and six months after the transfusion. The latter are considered to be the extremes of the incubation period, although this is usually between two and four and one-half months.[1] As most surviving recipients had returned to their homes shortly after the administration of plasma, it was not considered feasible to attempt to detect possible cases of hepatitis without jaundice, a diagnosis difficult to make without laboratory assistance.

2. *Observations.*—Of the 924 recipients in the original sample, there were 649 who proved to be suitable for study and for whom adequate information was obtained (table 1). Home visits were made to 602 of

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From the Office of Medical Administration and the Division of Communicable Diseases, New York State Department of Health.

Miss Lillian Johnston, Consultant Nurse in Communicable Diseases, was in charge of the home visiting of the plasma recipients.

[1] Neefe, J. R.: Recent Advances in the Knowledge of "Virus Hepatitis," M. Clin. North America 30: 1407-1443 (Nov.) 1946.

these persons, the data being secured from the physicians alone in the remaining 47.

The results of the study are presented in table 2. In 29 patients there developed a syndrome characteristic of homologous serum jaundice. In 26 of these, the information with regard to the illness was either supplied directly by the physician or confirmed by him after being first obtained from the patient or his family. In the remaining 3, either there was no physician in attendance or it was not possible to obtain information from him. However, the clinical picture was typical, and the cases were included as examples of homologous serum jaundice.

Table 3.—*Significant Data Concerning Plasma Recipients in Whom Homologous Serum Jaundice Developed*

Case	Age, Years	Sex	Original Illness	Other Blood Therapy	Days Between First Plasma Transfusion and Onset of Jaundice	Remarks
A 1............	52	♀	Carcinoma of breast	None	65	Recovery after severe illness lasting 4 weeks; subjected to laparotomy for possible obstructive jaundice; operative observations compatible with infectious hepatitis
A 2............	73	♀	Abdominal tumor	None	74	Recovery after mild illness lasting 3 weeks
A 3............	63	♂	Nephrolithiasis	None	75	Recovery after moderately severe illness lasting 3 weeeks
A 4............	35	♀	Nephrolithiasis	None	106	Recovery after mild illness lasting 3 weeks
A 5............	76	♂	Carcinoma of prostate	Whole blood	72	Died 14 days after onset of jaundice; physician stated hepatitis was contributory cause of death, carcinoma being primary cause
A 6............	65	♀	Ovarian cyst	None	137	Recovery after illness, which was mild but prolonged for 6 weeks
A 7............	54	♂	Bleeding peptic ulcer	Whole blood	65	Recovery after mild illness lasting 2 weeks
A 8............	51	♀	Chemical pneumonia	Not stated	57	Severe illness necessitating hospitalization; improved in 3 weeks but relapsed 6 weeks later; then confined to bed again for 10 weeks; final recovery
A 9............	23	♂	Laceration of vein	Whole blood	71	Recovery after moderately severe illness lasting 3½ weeks
A 10............	52	♀	Cirrhosis of liver	Whole blood	90	Recovery after mild illness lasting 3 weeks; case included despite original illness with cirrhosis, because of classic incubation period and symptoms and lack of jaundice at any other time before or after; patient followed 6 months after bout of jaundice; had been working for last 5 months; cirrhosis apparently not progressive
A 11............	60	♀	Hyperthyroidism	None	70	Recovery after severe illness lasting 2 weeks
A 12............	71	♀	Uterine prolapse	None	100	Recovery after severe illness lasting 6 weeks
A 13............	67	♀	Brain tumor	None	79	Recovery after moderately severe illness lasting 2 weeks
A 14............	82	♂	Obstruction of urinary tract	Whole blood	132	Recovery after mild illness lasting 4 weeks.
A 15............	28	♂	Peritonitis	None	66	Recovery after severe illness lasting 10 days
A 16............	52	♂	Bleeding peptic ulcer	None	125	Died after severe illness of 26 days; death ascribed to homologous serum jaundice
A 17............	37	♂	Burns	Not stated	155	Recovery after mild illness lasting 10 days
A 18............	62	♂	Intestinal obstruction	Whole blood	67	Recovery after severe illness lasting 10 days
A 19............	53	♂	Cholecystitis	None	58	Recovery after mild illness lasting 1 week; case included despite original illness with cholecystitis because of classic incubation period and symptoms and absence of evidences of biliary tract disease at time of jaundice; jaundice not present at time of original illness
A 20............	30	♀	Parturition	None	102	Recovery after mild illness lasting 2 weeks
A 21............	44	♀	Carcinoma; site unknown	None	120	Recovery after moderately severe illness lasting 8 weeks
A 22............	74	♀	Circulatory collapse	None	113	Recovery after moderately severe illness lasting 8 weeks
A 23............	72	♀	Hernia	None	102	Recovery after moderately severe illness lasting 8 weeks.
A 24............	70	♀	Gangrene of foot	Whole blood	130	Died 4 weeks after onset of jaundice; primary cause of death stated as gangrene, with jaundice possibly a contributory cause
A 25............	75	♂	Incarcerated hernia	None	92	Died 4 days after onset of jaundice; diagnosis, acute yellow atrophy of liver
A 26............	58	♂	Cholecystitis	None	76	Recovery after mild illness lasting 2½ weeks; case included despite original illness with cholecystitis because of classic incubation period and symptoms and absence of evidences of biliary tract disease at time of jaundice; jaundice not present at time of original illness
A 27............	56	♂	Dysentery	None	80	Recovery after moderately severe illness lasting 2½ weeks; patient had history of exposure to carbon tetrachloride over 2 year period, but symptoms and period of time between plasma therapy and onset of illness were considered typical of homologous serum jaundice
A 28............	30	♀	Abruptio placentae	Whole blood	88	Recovery after moderately severe illness lasting 4 weeks
A 29............	72	♂	Malignancy of colon	Whole blood	139	Recovery after moderately severe illness prolonged over 4 months

Based on the entire group of 649 recipients, the incidence of homologous serum jaundice is 4.5 per cent. If one excludes the 44 patients who died between one and six months after transfusion without developing jaundice, on the grounds that they might have done so had they survived longer, the incidence would be 4.8 per cent. In contrast, there were no cases of jaundice reported among the 1,597 household contacts of the recipients. This latter group included 56 persons who were contacts of the recipients in whom jaundice had developed.

Table 3 tabulates the pertinent data concerning each recipient with homologous serum jaundice. The incuion period varied between fifty-seven and one hundred and fifty-five days, which is consistent with the observations of others.[1] Distribution between the sexes was about equal, there being 15 women and 14 men.

The number of patients in the older age group was striking. The median age for the jaundice cases was 57 years compared to 39 years for the recipients in whom jaundice did not develop. The number of cases of jaundice is too small to warrant a breakdown by age into decades. However, a broader division revealed no cases of jaundice in recipients less than 20 years of age, an incidence of 2.2 per cent among the recipients between 20 and 49 and an incidence of 8.7 per cent among those who were 50 years of age or more (table 4). These differences are statistically significant.

TABLE 4.—*Distribution According to Age of Plasma Recipients in Whom Homologous Serum Jaundice Developed*

Age in Years	Total Cases	Homologous Serum Jaundice	
		Number	Percentage
0 to 19	78	0	0.0
20 to 49	319	7	2.2
50 to 89	252	22	8.7
Total	649	29	4.5

In 19 instances the illnesses were considered to have been either mild or moderately severe. Nevertheless, incapacitation in these instances varied from one to six weeks. Six patients who recovered were considered to have been severely ill. On 1 of these (case A 1) a laparotomy had been performed because of the possibility of an obstructiion of the biliary tract. Another (case A 8) had been confined to bed for a total period of thirteen weeks because of a relapse subsequent to initial recovery.

Four deaths occurred. In 2 instances death was attributed directly to homologous serum jaundice (cases A 16 and A 25). In the other 2 patients the clinical data indicated that death was due to an unassociated preexisting illness, with homologous serum jaundice superimposed and playing a contributory role (cases A 5 and A 24). It is impossible to state whether these persons would have survived somewhat longer if hepatitis had not developed. Thus, the fatality rate is at least 6.9 per cent, and possibly 13.8 per cent if the latter 2 cases are included.

3. *Distribution of the Icterogenic Agent Among Various Lots of Plasma.*—Unfortunately, a large proportion of the transfusion reports did not state the lot number of the plasma, thus complicating the study of the distribution of the icterogenic agent. Among the 29 patients with jaundice, the lots of the administered plasma could be identified in only 19. This group had received plasma from 22 different lots. Only 2 of the patients had received plasma from the same lot, indicating that at least 18 of the lots given to the 19 patients were icterogenic.

Further study of the lot which had been given to 2 recipients in whom jaundice developed revealed that it had also been administered to 9 other traceable patients. All 9 had survived six months thereafter, and in none had jaundice developed. The attack rate among the traceable recipients of this lot is therefore about 22 per cent. Twenty of the remaining 21 lots were reported to have been administered to from 1 to 7 other patients without causing jaundice.

A total of 385 identifiable lots were reported as having been given to the entire group of plasma recipients. Of these, 18, or 4.7 per cent, appeared responsible for jaundice. The latter is a minimum figure, as 368 of the identifiable lots had been administered to 5 or less patients, and in view of the apparently low attack rate among recipients many icterogenic lots may have remained undetected because of the small number of trials.

PART B: INVESTIGATION OF RECORDED DEATHS ASCRIBED TO ACUTE HEPATITIS

In the second part of this study, a group of patients who died of some form of acute hepatitis was investigated in order to disclose whether the deaths might be attributed to jaundice associated with plasma or blood therapy. The patients were selected from those for whom physicians had submitted death certificates listing such diagnoses as acute hepatitis, infectious hepatitis, homologous serum jaundice or acute yellow atrophy. The follow-up procedures were carried out by medical personnel of the various district offices of the New York State Department of Health, and the information set down was obtained from the records of the hospital or the attending physician or by interview of the patient's family.

Early in 1946 a random sample of 8 deaths was studied, and it was disclosed that in 3 of these the patients had had transfusion therapy within six months of the onset of the fatal illness. Therefore it was decided to carry out this type of study on all deaths due to hepatitis. From Sept. 16, 1946 through April 15, 1947 a total of 43 such reports was received by the State Department of Health. Investigation of these deaths showed that 12 of the 43 patients had a history of transfusion therapy.

TABLE 5.—*Significant Data Concerning Recorded Cases of Fatal Hepatitis Associated with Transfusion Therapy*

Case	Age in Years	Sex	Original Illness	Transfusion Therapy	Days Between First Transfusion and Onset of Jaundice
B 1*	66	♂	Thigh injury	Plasma	70
B 2*	76	♂	Duodenal ulcer	Plasma	148
B 3*	70	♂	Intestinal obstruction	Plasma	104
B 4	54	♀	Gastric ulcer	Whole blood	61
B 5	5	♀	Unknown	Plasma	144
B 6*	66	♂	Carcinoma of rectum	Plasma	68
B 7*	22	♀	Ovarian abscess	Plasma	73
B 8	48	♀	Compound fracture of legs	Plasma	164
B 9*	20	♀	Postpartum hemorrhage	Plasma	67
B 10*	34	♀	Ectopic pregnancy	Plasma	43
B 11*	18	♀	Burns	Plasma and whole blood	62
B 12	61	♂	Duodenal ulcer	Whole blood	104
B 13*	45	♂	Hydronephrosis; kidney stones	Plasma	47
B 14	74	♀	Hip fracture	Plasma	52
B 15*†	75	♂	Incarcerated hernia	Plasma	92

* Autopsy performed. † Same case as A 25 (table 3).

Thus, 15 of the 51 fatal cases investigated appeared to be associated with previous transfusions of plasma or blood. The pertinent data concerning these cases are recorded in table 5. Clinically, each of the cases met the criterion for the diagnosis of homologous serum jaundice given in part A of this study. Autopsy was performed in 10 instances, and in each the presence of acute hepatitis was established as the primary cause of death.

In 14 instances the illness which existed at the time of the transfusion had completely subsided before the onset of jaundice. The only exception was case B 6, in which the original illness was carcinoma of the rectum. This latter case was among those in which autopsies were performed, and no evidence of hepatic metastasis was demonstrated.

Twelve patients had received pooled plasma only, and 1 patient had been given pooled plasma and whole blood. In each instance the plasma had been obtained from the state department of health. Two patients had received whole blood only. The period between the day of the first transfusion and the onset of jaundice varied from forty-three to one hundred and sixty-four days. Distribution by sex was approximately equal, there being 8 women and 7 men. The median age of the 14 persons was 54 years.

Lot numbers were available for only 6 of the 13 patients who had received plasma, and in none of these was the same lot involved. However, the plasma lot administered in case B 14 was also found accountable for the jaundice which occurred in 3 nonfatal cases. (The latter cases are not among those disclosed in the first part of this study.) Since a total of 7 persons received units of this lot, the attack rate in this group was 57 per cent. Indirect evidence that other lots of plasma may have accounted for multiple cases of infection was indicated by the fact that 3 deaths occurred at one hospital and 2 each at two other hospitals.

COMMENT

A follow-up investigation of a large series of persons who received transfusions with pooled plasma has indicated that this form of therapy carries a significant risk of a serious and possibly fatal complication. The number of persons receiving plasma in Upstate New York is at least 15,000 per year.[2] With a 4.5 per cent incidence of homologous serum jaundice in the recipients of plasma, one can estimate a total of 675 cases annually.

Investigation of recorded deaths due to hepatitis revealed that 12 which were attributable to homologous serum jaundice occurred during a seven month period. This would be an average of 21 deaths per year. This is less than might be expected with a fatality rate of 6.9 per cent, but the rate was based on a small number of deaths. It must also be considered that there may be many cases which are missed because of erroneous reporting.

The incidence of 4.5 per cent is lower than that reported by Spurling, Shone and Vaughan.[3] These authors conducted a similar type of study and followed up patients who had received blood products supplied by the Northwest London Blood Supply Depot. They found 77 frank (7.3 per cent) and 14 doubtful (1.3 per cent) cases of homologous serum jaundice among 1,054 persons followed five months or longer after receiving pooled plasma or serum. (The doubtful cases were those in which the jaundice was most likely attributable to some other cause. In the present study, such cases were eliminated.) However, their cases[3] appear to have been less severe, as only 1 of the frank cases involved serious illness. There were only 2 deaths, and these occurred among the doubtful cases.

Grossman and Saward[4] reported 8 cases of homologous serum jaundice occurring among the recipients of 501 transfusions of commercial pooled plasma at the Northern Permanente Foundation Hospital. This indicates an incidence of over 2 per cent, as the actual number of recipients was less than 501. No follow-up was carried out to determine the occurrence of jaundice in those who remained at home. There was 1 death among the 8 cases, giving a fatality rate of 12.5 per cent.

Scheinberg, Kinney and Janeway[5] have recently reported 11 cases of hepatitis, including 4 fatalities, which were probably due to prior transfusions of plasma or blood. Plasma appeared to be the more likely causative agent. Based on the number of plasma transfusions given at Peter Bent Brigham Hospital over the period during which these persons had originally been hospitalized, the calculated incidence was 1 case of jaundice in every 86 plasma transfusions. However, follow-up was limited to those recipients who were of special interest because of their original disease or who had received plasma already suspected of being icterogenic.

The failure to find any instances of jaundice among the household contacts rules against the possibility that the jaundice occurring in the recipients of plasma might have been due to infectious hepatitis rather than to homologous serum jaundice. The household contacts included large numbers of children, who would be more susceptible to infectious hepatitis were it occurring in the community.[1] In contrast, most of the plasma recipients in whom jaundice developed belonged to the older age group, among whom infectious hepatitis is less likely to occur. Grossman and Saward[4] also observed an absence of secondary cases in the families of patients with homologous serum jaundice. On the other hand, in a study of the families of 77 patients with infectious hepatitis they found that 13, or 17 per cent, of the members had or subsequently acquired jaundice.

At least 9 patients whose cases are included in part A of this study are known to have received whole blood in addition to pooled plasma transfusions, and the possibility does exist that the whole blood may have been responsible for the jaundice in some of these. However, this possibility seems remote in view of several reports which demonstrate a significantly greater incidence of jaundice in recipients of pooled material than in recipients of blood, plasma or serum from individual donors.[6] The most extensive study is that of Spurling, Shone and Vaughan.[3] Although these investigators observed a high incidence of jaundice after transfusions of pooled plasma or serum (vide supra), they were able to discover no frank and only 6 doubtful cases among 891 recipients of whole blood from individual donors.

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[2] New York State Department of Health: Unpublished data.

[3] Spurling, N.; Shone, J., and Vaughan, J.: The Incidence, Incubation Period, and Symptomatology of Homologous Serum Jaundice, Brit. M. J. **2**: 409-413 (Sept. 21) 1946.

[4] Grossman, C. M., and Saward, E. W.: Homologous Serum Jaundice Following the Administration of Commercial Pooled Plasma, New England J. Med. **234**: 181-183 (Feb. 7) 1946.

[5] Scheinberg, I. H.; Kinney, T. D., and Janeway, C. A.: Homologous Serum Jaundice: A Problem in the Operation of Blood Banks, J. A. M. A. **134**: 841-848 (July 5) 1947.

[6] (*a*) Spurling, Shone and Vaughan.[3] (*b*) Loutit, J. F., and Maunsell, K.: Prevention of Homologous Serum Jaundice, Brit. M. J. **2**: 759-761 (Dec. 1) 1945. (*c*) Schindler-Baumann, J.: Blood Transfusions and Epidemic Hepatitis, Praxis **35**: 112-113 (Feb. 14) 1946.

Part B of the current study brings forth additional evidence with regard to the greater hazard associated with plasma as compared with whole blood. Of 15 deaths ascribed to this disease, 12 persons had received plasma, 2 whole blood and 1 both plasma and blood. A survey made in Upstate New York showed that the ratio of whole blood to plasma transfusions was about 2:1.[2] Yet the ratio of whole blood to plasma transfusions among these 14 cases of homologous serum jaundice was at least 1:4 and possibly 1:6.

The significantly higher incidence of jaundice among plasma recipients who were more than 50 years of age is worthy of comment. In their monograph on icterus subsequent to vaccination against yellow fever, Fox, Manso, Penna and Para[7] have discussed the possibility that lowered hepatic resistance associated with chronic intoxication of the liver or dietary deficiency may serve as a factor in rendering persons susceptible to the icterogenic agent contained in blood products. It is possible that such a factor may have been responsible for the age distribution of cases observed in the present study. In elderly patients hepatic impairment as demonstrated by liver function tests has been shown to be common[8] and latent vitamin deficiency is prevalent.[9]

The possibility was suggested that the size of the transfusions or the use of two or more different lots may have been a factor in determining the recipients in whom jaundice would develop. However, according to the available information, 20 of the 29 jaundice patients had received a single unit of plasma only. The average number of units received by the 29 patients was about 1.5, which is identical with that received by the entire group of plasma recipients.

The frequency with which homologous serum jaundice may occur as a complication of pooled plasma therapy calls for immediate and intensive research aimed at the development of methods for the elimination of the virus. These studies have indicated that the causative agent is present in many different lots of plasma. The exclusion of donors with a history of jaundice and the performance of various laboratory tests on all others will serve to eliminate only a fraction of the asymptomatic carriers of the virus. Single injections of gamma globulin did not lower the incidence of subsequent jaundice among plasma recipients in the military services.[10] Encouraging results were obtained when two injections were given 30 days apart,[11] but the complication was not entirely eliminated and the procedure may be difficult to carry out in civilian life because of the failure of the patients to return. The use of smaller pools may cut down the dissemination of a virus present in any one specimen, but the hazard will still exist. It must also be considered that reduction of the number of specimens per pool below eight will not allow for adequate dilution of isoagglutinins.

Two approaches to this problem offer much promise. First, it has been demonstrated that icterogenic plasma units lose their ability to transmit jaundice after exposure to irradiation with ultraviolet light.[12] The intensive method of applying ultraviolet radiation to bacteria and viruses, as developed by Levinson and his co-workers,[13] may provide a means of irradiating plasma for large-scale processing.

The second possibility is to substitute the albumin fraction for whole plasma in all instances in which such substitution would be clinically warranted.[14] The stability of the albumin fraction as derived by the newer methods of preparation is so great that it can be heated for ten hours at 60 C. in the final container before distribution. This process is believed to inactivate the virus.

Much further study is necessary to demonstrate whether irradiated plasma and the albumin fraction are absolutely virus-free. Also, it will take some time to prepare either material in sufficient quantities to meet all needs. Therefore there would appear to be no point in recalling the pooled plasma being distributed at the present time. However, it must be emphasized that this plasma should be administered only when the clinical indications are absolute, so that the benefits to be derived clearly outweigh the risk of contracting homologous serum jaundice.

SUMMARY

1. Follow-up of 649 patients who received transfusions with dried pooled plasma revealed a subsequent incidence of homologous serum jaundice in 4.5 per cent.
2. The causative agent appears to be widely distributed, but the attack rate is variable.
3. The attack rate was significantly higher among persons who were 50 years of age or more. No relation of the attack rate to the amount of plasma administered could be demonstrated.
4. Investigation of 51 deaths attributed to acute hepatitis revealed 15 cases in which the patients had received transfusion therapy during the six months prior to death. Twelve of these had received plasma only.
5. Twelve deaths attributable to homologous serum jaundice were reported in Upstate New York during a seven month period.
6. Plasma, as well as other forms of transfusion therapy, should be administered only when the clinical indications are absolute, so that the benefits to be derived clearly outweigh the risk of contracting homologous serum jaundice.
7. Immediate, intensive research toward the elimination of the causative agent is imperative.

ADDENDUM.—Subsequent to the submission of this article for publication, a physician belatedly provided information that homologous serum jaundice had developed in a plasma recipient who was originally included in the unlocated group (table 1). The patient was a woman aged 30 who received a transfusion with pooled plasma following an operation for pelvic inflammatory disease. The syndrome of acute hepatitis appeared thirty days later, and the patient was severely ill for a two week period.

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[8] Rafsky, H. A., and Newman, B.: Liver Function Tests in the Aged, Am. J. Digest. Dis. **10**: 66-69 (Feb.) 1943.

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[12] (a) Oliphant, J. W.: Jaundice Following Administration of Human Serum, in Harvey Lectures, 1943-1944, Baltimore, Williams & Wilkins Company, 1944, vol. 39, pp. 254-272. (b) Oliphant, J. W., and Hollaender, A.: Homologous Serum Jaundice: Experimental Inactivation of Etiologic Agent in Serum by Ultraviolet Irradiation, Pub. Health Rep. **61**: 598-602 (April 26) 1946.

[13] Levinson, S. O.; Milzer, A.; Shaughnessy, H. J.; Neal, J. L., and Oppenheimer, F.: A New Method for the Production of Potent Inactivated Vaccines with Ultraviolet Irradiation, J. Immunol. **50**: 317-329 (June) 1945.

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ANURIA TREATED BY PERITONEAL IRRIGATION

LAURENCE A. GROSSMAN, M.D.
EDWIN M. ORY, M.D.
and
DAN H. WILLOUGHBY, M.D.
Nashville, Tenn

The treatment of renal failure by the substitution of an artificial kidney has long been considered, and animal experimentation and clinical trials have been carried out. The employment of the peritoneum as a dialyzing membrane constitutes a promising approach to this problem. Its use has not been feasible in the past for several reasons: (1) the lack of a satisfactory lavage fluid, that is, a fluid that would not cause significant disturbance of water and electrolyte balance; (2) the great susceptibility of the peritoneum to infection and the seriousness of such infection, and (3) the technical difficulties with clotting in carrying out the procedure.

Recent developments have largely overcome these difficulties. The work of Abbott and Shea[1] using nephrectomized dogs resulted in the composition of a suitable lavage fluid. Fine, Frank and Seligman[2] improved the technic of peritoneal irrigation in human beings. They successfully treated a patient with uremia and showed that this form of therapy is practical in other cases. Careful asepsis has lessened the danger of peritoneal infection, and new antibiotics are of great value in the prevention and control of infection. Heparin, which reduces the formation of fibrin, has made continuous peritoneal irrigation possible.

From the limited experience thus far reported, peritoneal irrigation is most valuable in renal failure which is potentially reversible and which may be encountered in transfusion reactions, sulfonamide toxication, mercurial poisoning and reflex anuria.

REPORT OF CASE

History.—L. F., a married white woman aged 38, was admitted to the obstetric service of Vanderbilt University Hospital on Sept. 30, 1946, because of difficult labor. This was her third pregnancy. It had been uncomplicated until the month prior to admission, when she began to have headache, vertigo, mild edema of the ankles, nocturia and frequency of urination. During the three days before entry oliguria was noted. There was no history of previous renal disease. Twelve hours before admission labor began with spontaneous rupture of the membranes. Despite hard labor there was no progress.

Physical Examination.—Examination revealed a moderately obese woman in active labor. She was alert and afebrile. The skin and scleras were faintly icteric. The ocular fundi were normal. The heart and lungs were normal. The abdomen was distended with a full term gravid uterus. Tenderness of the costovertebral angle was not present. There was mild edema of the legs below the knees. Examination of the blood revealed a white cell count of 20,000 with a normal differential formula and a hemoglobin level of 12.5 Gm.

Course.—The patient was unable to void at the time of admission. The bladder was catheterized and 30 cc. of bloody urine was obtained. During the following eight hours there were strong regular uterine contractions, but the patient did not progress beyond the first stage of labor. Thom's pelvimetry revealed a mild cephalopelvic disproportion. Because of this disproportion and the history of several vaginal examinations prior to admission a Porro cesarean section was performed with the patient under spinal anesthesia induced by the use of 150 mg. procaine hydrochloride. The patient tolerated the operation well. A viable child was delivered. Blood loss was estimated at 2,000 cc., and a transfusion of 1,500 cc. type O whole blood was administered. At no time did the blood pressure fall to shock levels. The bladder was catheterized at the end of the operation, but no urine was obtained.

After delivery the patient's jaundice increased. On the third hospital day, because of continued anuria cystoscopic examination was performed. The bladder wall appeared edematous and hemorrhagic. Ureteral catheters were passed to each kidney pelvis but no urine was obtained. The renal pelves were irrigated, and the catheters were left in place for four days. Subsequent to this procedure the temperature rose to 101 F., then fell rapidly to normal. There was a rising azotemia and other hematic chemical changes characteristic of renal failure during the eight days following the operation (fig. 1 and table 1). A concomitant fall in the red blood cell count and hemoglobin level occurred during this period. The red cell count fell from 4.65 to 2.12 million per cubic millimeter, and the hemoglobin value fell from 12.5 to 6.0 Gm. per hundred cubic centimeters. The icterus index ranged from 19 to 23. These changes progressed until peritoneal irrigation was instituted.

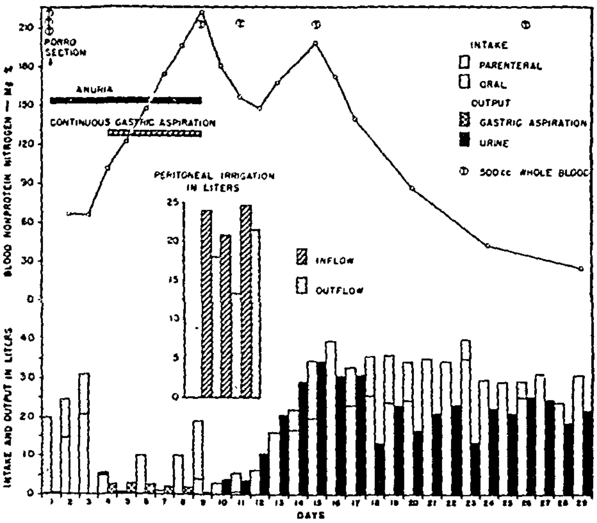

Fig. 1.—Fluid balance and course of azotemia.

Signs of adynamic ileus developed on the fourth hospital day. Continuous gastric aspiration with Wangensteen suction was started with considerable relief of the abdominal distention; however, no peristaltic activity was observed. In the period between the fifth and ninth hospital days the patient received only small amounts of fluid because of the presence of moderate edema (fig. 1). The fluids which were administered consisted of whole blood and 5 per cent dextrose in isotonic sodium chloride solution. Fifty cubic centimeters of 50 per cent dextrose was given on a single occasion.

Irrigation Period.—On the ninth hospital day and the eighth day of anuria the nonprotein nitrogen level had risen to 224 mg. per hundred cubic centimeters, and the patient was drowsy. Peritoneal irrigation was then initiated. Without removing the patient from the bed she was prepared and draped as for a surgical procedure. With the patient under local anesthesia a mushroom catheter was inserted through a small incision in the right upper quadrant and sutured in place. Similarly, a sump drain was inserted into the abdominal cavity through an incision in the left lower quadrant. The irrigation system is illustrated in figure 2.

From the Department of Medicine, Vanderbilt University School of Medicine.

[1] Abbott, W. E., and Shea, P.: Treatment of Temporary Renal Insufficiency (Uremia) by Peritoneal Lavage, Am. J. M. Sc. **211**: 312-319, 1946.

[2] Frank, H. A.; Seligman, A. M., and Fine, J.: Treatment of Uremia After Acute Renal Failure by Peritoneal Irrigation, J. A. M. A. **130**: 703-705 (March 16) 1946. Seligman, A. M.; Frank, H. A., and Fine, J.: Treat[illegible]nia by Means of Peritoneal Irrigation, J. Clin. [illegible] 1946. Fine, J.; Frank, H. A., and Seligman, [illegible]cute Renal Failure by Peritoneal Irrigation, Ann. Surg. **124**: 857-878, 1946.

irrigation fluid had a composition similar to that of solution A of Abbott and Shea,[1] modified only by the addition of penicillin and heparin (table 2). The fluid was administered from liter flasks, and the rate of inflow was adjusted to 1 liter per hour. The volume of outflow was measured hourly. The outflow was spontaneous, no suction being applied. The rate of outflow varied considerably from hour to hour, at times greatly exceeding the volume of inflow and at other times being much less.

TABLE 1.—*Blood Chemical Analyses*

Hospital Day	Blood N.P.N., Mg./100 Cc.	Blood Creatinine, Mg./100 Cc.	Plasma, CO_2 Vol. %	Serum Calcium, Mg./100 Cc.	Serum Phosphorus, Mg./100 Cc.	Serum Protein, Gm./100 Cc.	Serum Chloride, mEq./L.
			Anuria				
2	67	....	....	....	....	....	....
3	67	....	....	....	....	....	....
4	112	....	....	7.9	....	....	....
5	124	14.4	45.7	....	....	4.39	....
6	148	....	41.2	....	....	....	....
7	176	19.2	....	6.5	12.3	5.09	81.6
8	196	....	37.4	....	....	....	....
9	224	23.4	36.2	6.7	15.4	5.06	79.2
			Peritoneal Irrigation				
10	180	....	41.2	6.7	9.4	4.86	86.7
11	156	17.4	43.0	8.2	9.2	4.28	91.8
12	148	15.1	39.3	8.2	8.0	4.15	91.5
			Recovery of Renal Function				
13	168	16.8	36.2	....	....	....	....
15	200	16.0	30.5	6.5	10.2	4.45	95.4
16	172	13.3	33.4	....	....	....	....
17	144	....	31.9	8.3	7.5	5.28	94.8
20	87	3.3	37.2	....	....	....	....
24	44	2.2	43.8	10.3	3.8	5.58	104.1
29	27	....	50.4	....	....	....	....
68	25	1.0	57.9	10.6	3.9	6.41	107.1
105	32	....	53.2	10.6	3.9	6.88	....

After peritoneal irrigation was instituted the course of events changed decidedly for the better. There were no signs of overhydration or underhydration; the blood pressure did not fall significantly, and there was no pulmonary congestion or increase in edema. Drowsiness disappeared, and the patient remained mentally clear. Forty-five cubic centimeters of dark bloody urine was obtained by catheterization during the first day of irrigation. Following this there was a rapid increase in urinary output, as illustrated in figures 1 and 3. During the three day irrigation period, the nonprotein nitrogen level of the blood fell from 224 to 148 mg. per hundred cubic centimeters, with a corresponding decline in the creatinine and serum phosphorus concentrations.

TABLE 2.—*Composition of Lavage Fluid*

Solutes per 1,000 cc. distilled water	
Sodium chloride	6.10 Gm.
Calcium chloride	0.23 Gm.
Potassium chloride	0.35 Gm.
Sodium phosphate (monobasic)	0.07 Gm.
Magnesium chloride	0.05 Gm.
Sodium bicarbonate	2.20 Gm.
Dextrose	5 to 10 Gm.
Heparin	0.002 Gm.
Penicillin	10,000 Units

TABLE 3.—*Peritoneal Outflow Fluid*

Hospital Day	9	10	11
Specific gravity	1.015	1.014	1.013
Nonprotein nitrogen, mg./100 cc.	184	144	37
Urea nitrogen, mg./100 cc.	146	...	...
Creatinine, mg./100 cc.	...	15.9	...
Total protein, Gm./100 cc.	0.24	0.15	0.03
Chloride, mEq./L.	97.2	91.2	93.0
CO_2 combining power, vol. %	41.2	41.2	57.9
Culture	Sterile	Sterile	Esch. coli A. fecalis

The total nitrogen excretion by urine and lavage fluid is shown in figure 3 and table 3. A total of 71.4 Gm. nitrogen was eliminated in the irrigation fluid, while 4.07 Gm. was excreted in the urine during the same period. The lavage fluid during the first two days of the irrigation remained sterile. On the third day Alcaligenes fecalis and Escherichia coli were cultured. After seventy-two hours the irrigation was discontinued and 0.5 Gm. of streptomycin was instilled intraperitoneally. During the preceding twenty-four hours the urinary output had been 1,080 cc., and it was considered that there was sufficient recovery of renal function to warrant discontinuing the irrigation. On the third day of peritoneal irrigation (eleventh hospital day) for the first time peristalsis was audible and the patient had a spontaneous bowel movement.

Postirrigation Period.—During the three days following discontinuation of peritoneal irrigation the blood nonprotein nitrogen concentration rose to 200 mg. per hundred cubic centimeters; there was a concomitant rise in blood creatinine and serum phosphorus values, and a fall in serum calcium and plasma carbon dioxide. This occurred notwithstanding an increasing urinary output and total nitrogen excretion. After the third postlavage day (fifteenth hospital day) there was a continuous fall in the nonprotein nitrogen level, and other chemical values of the blood reverted gradually to normal. The nonprotein nitrogen was 27 mg. per hundred cubic centimeters on the twenty-ninth hospital day. After the initial fall in the red blood cell count and hemoglobin during the operative procedure, the anemia persisted despite three transfusions. The hemoglobin level ranging between 6 and 7 Gm. per hundred cubic centimeters. There was a leukocytosis; the white cell count varied between 15,000 and 25,000 until the twentieth hospital day, at which time it fell to normal. The edema gradually subsided during the week following peritoneal irrigation.

TABLE 4.—*Summary of Urinalyses*

Hospital Day	Specific Gravity	Albumin	Pyuria	Culture	Therapy
1	1.016	+	++	......	....
2 to 8		Anuria			
9 to 33	1.010 to 1.016	+	++++	P+++	Penicillin, 800,000 units daily 31st to 43d day
34 to 39	1.010 to 1.016	0	0	P++	
40 to 48	1.008 to 1.013	0	+++	P++++	Sulfadiazine, 5 Gm. daily 43d to 48th day
67 to 68	1.018	±	+	C+ P++	....

C, Esch. coli and P, p. vulgaris.

Table 4 summarizes the results of daily urinalyses. There was heavy pyuria throughout most of the course. Cultures were persistently positive for Proteus vulgaris. For the first three and a half weeks there was a slight albuminuria. The specific gravity ranged between 1.008 and 1.016. On the twenty-eighth hospital day of the patient there developed an acute pyelonephritis with chills, temperature of 103 F. and frequency and burning on urination. During the next three days there were daily elevations of temperature ranging between 103 and 105.6 F. The strain of P. vulgaris which was isolated from the urine was found to be inhibited in vitro by a concentration of 25 units of penicillin per cubic centimeter and also by streptomycin in the same unit concentration. Penicillin in doses of 100,000 units every three hours was administered for thirteen days. The temperature promptly fell to normal, the frequency and dysuria subsided and the pyuria decreased. However, urine cultures continued to yield a moderate growth of P. vulgaris. Pyuria subsequently increased. The sensitivity of P. vulgaris to penicillin was again determined, and on this occasion the organism was found to be resistant to more than 1,000 units of the drug per cubic centimeter. It was also found to be a potent penicillinase producer. Sulfadiazine in doses of 5 Gm. a day was given between the forty-third and forty-eighth day of hospitalization without beneficial effect.

At the time of discharge on the forty-eighth hospital day the patient was ambulatory; she had no symptoms referable to the urinary tract and was afebrile. The blood chemical determinations were within normal limits and the hemoglobin level was

13 Gm. per hundred cubic centimeters. The Fishberg test showed a maximum urinary concentration of 1.016. Phenolsulphonphthalein excretion totalled 40 per cent in two hours; specimens collected at fifteen, thirty, sixty and one hundred and twenty minutes each contained 10 per cent of the dye. The urea clearance was 49.9 per cent of the average normal value. Moderate pyuria and a heavy bacilluria were still present.

The patient was reexamined on the sixty-seventh and sixty-eighth day after the onset of anuria Except for inconstant nocturia she had been asymptomatic during the three week period. The blood nonprotein nitrogen level was 25 mg. per hundred cubic centimeters. The maximum specific gravity of the urine was 1.018. Phenolsulphonphthalein excretion was 15 per cent at thirty minutes and 20 per cent at one hour, with a total excretion of 35 per cent in one hour. The urea clearance was 55 per cent of the average normal value. There was a slight pyuria, and culture of the urine yielded both P. vulgaris and Esch. coli. Reexamination on the one hundred and fifth day did not reveal any change. The blood nonprotein nitrogen was 32 mg. per hundred cubic centimeters; there was pyuria, and P. vulgaris was present in the urine.

COMMENT

It has not been possible to establish the etiologic basis of the anuria in this case. Likely causes that have been suggested are (1) reflex anuria, (2) cortical necrosis, (3) transfusion reaction and (4) the so-called hepatorenal syndrome. Of these causes it is our opinion that reflex anuria was the etiologic and physiologic mechanism operating in this case. The cephalopelvic disproportion with a prolonged and difficult labor, followed by an operation during which there was manipulation and trauma to the bladder and lower part of the urinary tract constitutes an ideal set of circumstances for the development of this condition. The presence of jaundice and oliguria prior to operative intervention militates against a diagnosis of transfusion reaction. The fact that the patient recovered would cast doubt on cortical necrosis as a cause of the anuria. However, Dieckmann[3] reported a case in which recovery occurred, postulating that necrosis involves only parts of the cortex, with edema and arteriospasm of the remaining cortical area. The presence of jaundice associated with renal failure suggests the possibility of the hepatorenal syndrome. The degree of hepatic failure in this case was insufficient to warrant such a diagnosis.

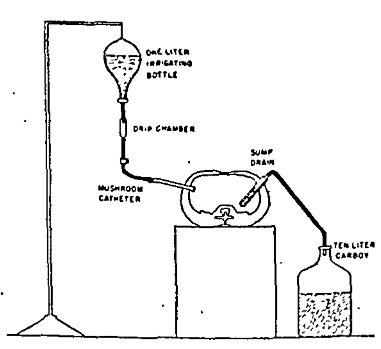

Fig. 2.—Diagram of peritoneal irrigation system.

Our experience with this case demonstrates that peritoneal irrigation is capable of correcting the blood chemical and clinical changes of uremia. It is important to use a fluid that has the proper electrolytic pattern and tonicity. Others[1] have pointed out that failure of this method of treatment in the past has been largely due to difficulty in controlling fluid and electrolyte balance. It will be noted in tables 1 and 2 that an equilibrium was rapidly established between the blood and the irrigation fluid with relation to electrolyte concentrations, and that the blood electrolyte pattern reverted toward normal during therapy.

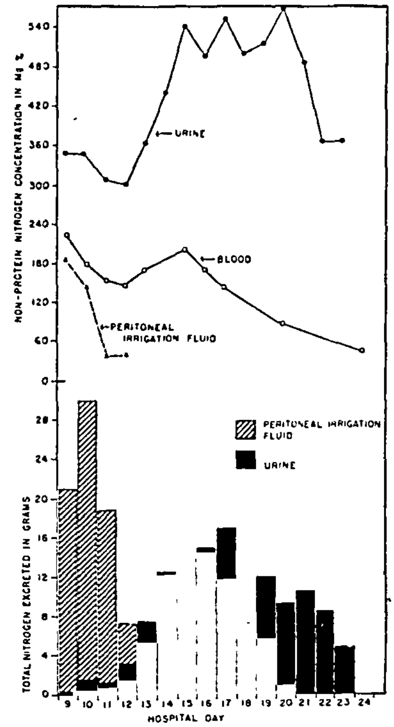

Fig. 3.—Nonprotein nitrogen concentration and nitrogen excretion.

Oliguria had been present for three days before complete renal shutdown occurred. Anuria then persisted for eight days, and the flow of urine began shortly after peritoneal lavage was started. It is impossible to say that the patient would not have survived without peritoneal irrigation, but it is our opinion that this procedure was responsible for her improvement and recovery. The total nitrogen excreted by the kidneys during the irrigation period was 4.07 Gm., while 71.4 Gm. were eliminated by the peritoneum during the same period. For three days after the irrigation had been discontinued the blood nonprotein nitrogen concentration again rose, proving that renal function had not recovered sufficiently to maintain an adequate excretion of nitrogen.

Although peritoneal lavage was begun on the eighth postoperative day and bacteria were found in the lavage fluid on the last day of irrigation, clinical signs of peritonitis did not develop. This was probably because the period of irrigation was brief and antibiotics were used prophylactically.

SUMMARY AND CONCLUSIONS

1. A case of anuria of eight days' duration, which followed a Porro cesarean section, was successfully treated by peritoneal irrigation.

2. It was demonstrated that this is an effective method of eliminating large quantities of nitrogenous products and of restoring blood electrolyte balance and fluid balance to physiologic levels.

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[3] Dieckmann, W. J.: The Toxemias of Pregnancy, St. Louis, C. V. Mosby Company, 1941, pp. 328-331.

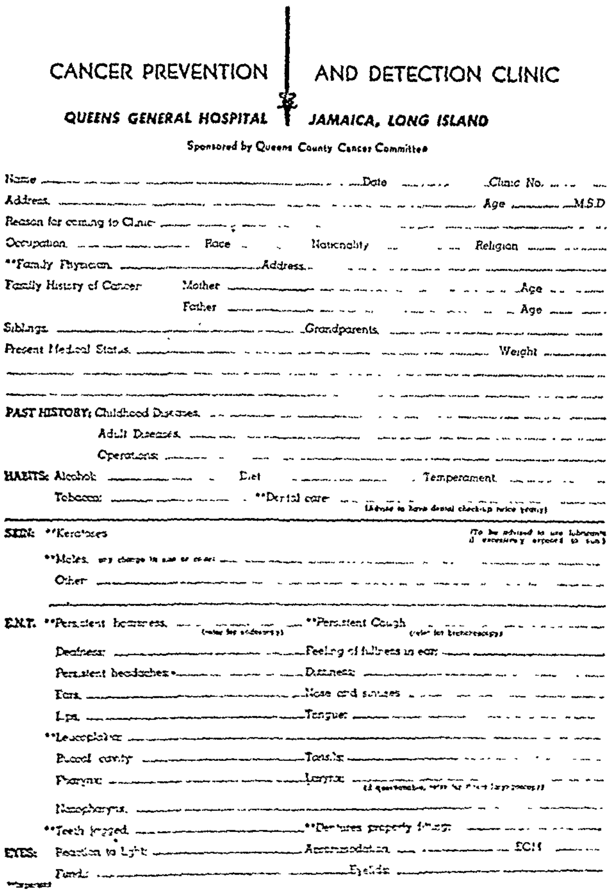
A CANCER PREVENTION AND DETECTION CLINIC

LEONARD B. GOLDMAN, M.D.
Long Island, N. Y.

The purpose of this article is to emphasize the importance of the early detection of cancer and to describe the Cancer Prevention and Detection Clinic of the Queens General Hospital. It is hoped that this paper will encourage other hospitals to establish similar clinics.

The first principle in the control of cancer is the recognition that the persistently high mortality is due first, to patients seeking medical aid when in a relatively advanced stage and second, to the failure of the initial examining physician to recognize early miniature malignant growths.

The public, due to the effective educational campaign of the American Cancer Society, has been taught to seek medical advice at an early date and is now prepared for a preventive type of cancer control. But many members of the medical profession are not equipped or lack the time to give the complete examinations necessary to rule out beginning cancer. With the great extension of knowledge in the oncologic field and the tremendous responsibility associated with early diagnosis, cancer has ceased to be a one man job. Group teamwork is essential.

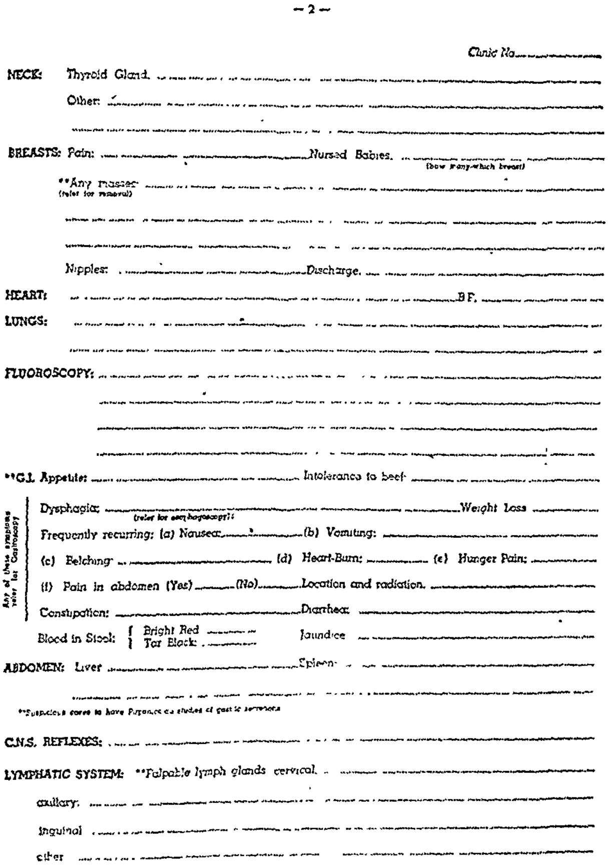


CANCER PREVENTION AND DETECTION CLINIC
QUEENS GENERAL HOSPITAL JAMAICA, LONG ISLAND
Sponsored by Queens County Cancer Committee

Name Date Clinic No.
Address Age M.S.D
Reason for coming to Clinic
Occupation Race Nationality Religion
**Family Physician Address
Family History of Cancer Mother Age
Father Age
Siblings Grandparents
Present Medical Status Weight
PAST HISTORY: Childhood Diseases
Adult Diseases
Operations
HABITS: Alcohol Diet Temperament
Tobacco **Dental care (Advise to have dental check-up twice yearly)
SKIN: **Keratoses (To be advised to use lubricants if excessively exposed to sun)
**Moles any change in size or color
Other
E.N.T. **Persistent hoarseness (refer for laryngoscopy) **Persistent Cough (refer for bronchoscopy)
Deafness Feeling of fullness in ear
Persistent headaches Dizziness
Ears Nose and sinuses
Lips Tongue
**Leucoplakia
Buccal cavity Tonsils
Pharynx Larynx (if questionable, refer for direct laryngoscopy)
Nasopharynx
**Teeth jagged **Dentures properly fitting
EYES: Reaction to Light Accommodation EOM
Fundi Eyelids
**Important

Fig. 1.—Page 1 of the form used in physical examinations at the Queens General Hospital Cancer Prevention and Detention Clinic.

Clinics as they are now organized are concerned chiefly with the obviously ill patient; a person with an early symptom-free carcinoma may be overlooked. Further, hospitals already overburdened with the sick cannot encourage periodic examinations of apparently healthy persons. Yet it is only by such examinations that early carcinomas and precancerous lesions may be detected.



—2—

Clinic No.
NECK: Thyroid Gland
Other
BREASTS: Pain Nursed Babies (how many-which breast)
**Any masses (refer for removal)
Nipples Discharge
HEART: B.P.
LUNGS:
FLUOROSCOPY:
**G.I. Appetite Intolerance to beef
Any of these symptoms refer for Gastroscopy
Dysphagia (refer for esophagoscopy) Weight Loss
Frequently recurring: (a) Nausea (b) Vomiting:
(c) Belching (d) Heart-Burn: (e) Hunger Pain:
(f) Pain in abdomen (Yes) (No) Location and radiation.
Constipation: Diarrhea:
Blood in Stool: Bright Red
Tar Black Jaundice
ABDOMEN: Liver Spleen
**Suspicious cases to have Papanicolaou studies of gastric secretions
C.N.S. REFLEXES:
LYMPHATIC SYSTEM: **Palpable lymph glands cervical
axillary
inguinal
other

Fig. 2.—Page 2 of the same form (fig. 1).

Until more is known about cancer, the most effective step for controlling this disease is the establishment of clinics where apparently healthy persons can be periodically examined. Such clinics would thoroughly study these persons in order (1) to detect early cancer, (2) to help prevent its development by eliminating its precursors, (3) to educate patients to avoid known carcinogenic agents and (4) to expedite the referral of the involved patient for the proper treatment.

The need and value of cancer prevention clinics is further attested to by the following statistics. Elise L'Esperance,[1] who pioneered in this work, examined 4,000 patients in her two clinics (Memorial and Women's Infirmary) and found a 6.5 incidence of cancers. Of these, 98 per cent were early growths which were curable. Of the total number of patients examined, 27 per cent had benign tumors, 30 per cent had other diseases and 36 per cent had no evidence of pathologic conditions. The startling fact was uncovered that cancer was present in 1.5 per cent of patients without any symptoms.

At present these two clinics are so overcrowded that appointments for examinations must be made six months or more in advance, indicating the urgent need for additional clinics.

From Queens General Hospital, Department of Hospitals, City of New York.

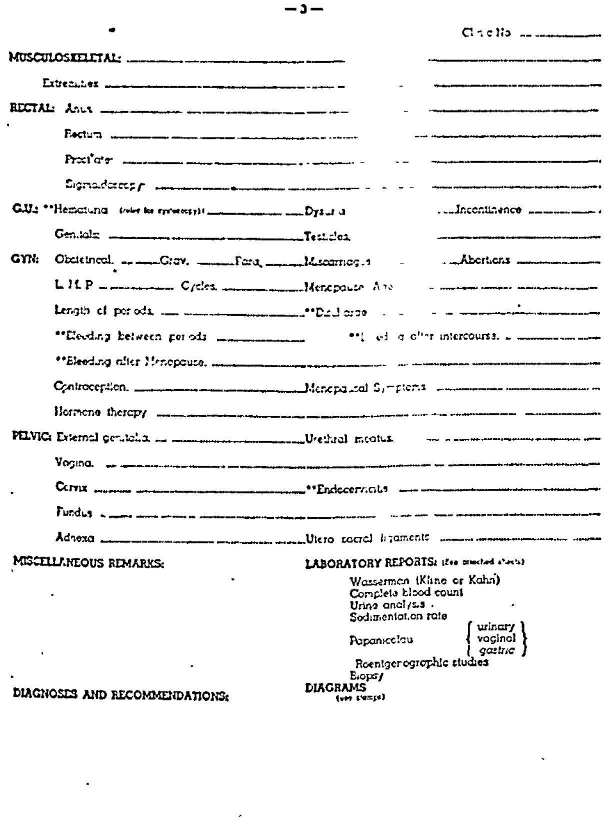
1. L'Esperance, E.: Cancer Prevention Clinics, M. Woman's J. 51: 17-21 (Jan.) 1944.

QUEEN'S GENERAL HOSPITAL CANCER PREVENTION AND DETECTION CLINIC

Organization.—The clinic is under the supervision of the Medical Board of the hospital. The Medical Board has appointed a director of the Clinic (an oncologist) who is responsible for its administration. The staff consists of five specialists: an internist, a surgeon, a gynecologist, an otolaryngologist and a dermatologist. Other personnel consists of two nurses, a laboratory technician, a social worker, a secretary and an orderly.

The clinic is financed by the Queens County Cancer Committee. For admission patients contact the committee, which determines their eligibility and accepts only those entitled to city care. Since the hospital is a municipal one, no charge is made for the examination.

The clinic is held two nights a week from 7 to 9 p. m., and approximately 8 new patients are examined at each session. The social worker (who acts as receptionist), the secretary and the laboratory technician begin their work at 6 p. m. This makes it possible to complete the medical and social histories and to collect the necessary laboratory specimens by 7 o'clock. The patient is then ready for the physical examination. Figures 1, 2 and 3 illustrate pages 1, 2 and 3 of the form used at the clinic.



—3—

Clinic No. ________

MUSCULOSKELETAL: ________

Extremities ________

RECTAL: Anus ________

Rectum ________

Prostate ________

Sigmoidoscopy ________

G.U.: **Hematuria ________ Dysuria ________ Incontinence ________

Genitals ________ Testicles ________

GYN: Obstetrical. ____ Grav. ____ Para. ____ Miscarriages ____ Abortions ________

L.M.P. ________ Cycles. ________ Menopause Age ________

Length of periods ________ **Discharge ________

**Bleeding between periods ________ **Bleeding after intercourse. ________

**Bleeding after Menopause. ________

Contraception. ________ Menopausal Symptoms ________

Hormone therapy ________

PELVIC: External genitalia ________ Urethral meatus ________

Vagina. ________

Cervix ________ **Endocervicitis ________

Fundus ________

Adnexa ________ Utero sacral ligaments ________

MISCELLANEOUS REMARKS:

LABORATORY REPORTS: (See attached sheets)
Wasserman (Kline or Kahn)
Complete blood count
Urine analysis
Sedimentation rate
Papanicolau { urinary / vaginal / gastric }
Roentgenographic studies
Biopsy

DIAGRAMS

DIAGNOSES AND RECOMMENDATIONS:

Fig. 3.—Page 3 of the same form (fig. 1). On the line for "Sigmoidoscopy" the revised form reads: (adenoma—refer for Ba enema).

Clinic Routine.—Social History: The size of the family, financial status and veteran status are recorded, and the eligibility of the patient is confirmed.

Medical History: Data, which may be taken by the social worker, are acquired on: (1) the family history with reference to incidence of cancer, including site, for at least two generations; (2) the past medical history, including dental, and (3) the present medical status of the patient.

Physical Examination: Thorough investigation of the body includes nasopharyngeal, laryngeal, vaginal and sigmoidoscopic examinations, roentgenogram of the chest and barium fluoroscopy of the esophagus and stomach.

Results of Examination of the First Three Hundred Patients

Benign Tumors (63)			
Angioma	1	Nasal polyp	2
Cervical polyp	3	Nevus	1
Cyst—Breast	1	Nodule—tongue	1
Cyst—testicle	2	Papilloma (gum)	1
Cyst—nasopharynx	3	Sarcoidosis	1
Cystic ovary	1	Sebaceous cyst	3
Fibroma	4	Subcutaneous nodule	1
Fibromatous tag (neck)	1	Uterine fibroid	19
Ganglion	1	Vocal cord nodule	6
Hypertrophied prostate	3	Von Recklinghausen's disease	3
Lipoma	5		
Potentially Precancerous (66)			
Cervicitis	39	Kraurosis vulvae	2
Colitis	2	Larynx—cord thickened	1
Cystic mastitis	1	Leukoplakia (lip)	1
Erosion cervical lip	11	Leukoplakia (tongue)	2
Keratoses	5	Rectal polyps	2
Inflammatory (33)			
Cholecystitis	4	Proctitis	2
Dermatophytosis	1	Prostatism	1
Gallstones	1	Psoriasis	2
Gastritis	1	Sinusitis	7
Hyperemia of cervix	2	Tonsillitis	2
Nasopharyngeal lymphoid tissue	4	Vaginitis	2
Perianal dermatitis	2	Vocal cord reddened	2
Structural (52)			
Anal stricture	1	Paresis—vocal cord	2
Cervical lacerations	3	Perianal tags	1
Cystocele	2	Pregnancy	1
Deviated septum	2	Prolapsed ovary	1
Endometrial hyperplasia	2	Rectal stenosis	1
Enlarged tonsil	1	Retroverted uterus	4
Epigastric hernia	1	Torus palatinus	1
Fistula in ano	1	Umbilical hernia	1
Flat feet	1	Urethral caruncle	7
Hemorrhoids	7	Urethrocele	1
Inguinal hernia	6	Varicose veins	5
Constitutional (38)			
Anemia	3	Emphysema	2
Aneurysm	1	Eosinophilia	1
Arrested pulmonary tuberculosis	1	Hypertension	5
Arrested tuberculosis of hip	1	Hypertensive heart disease	7
Arteriosclerotic heart disease	1	Menopausal symptoms	1
Arthritis	3	Neurasthenia	1
Chronic constipation	1	Peptic ulcer	4
Cirrhosis of liver	1	Psychoneurosis	1
Degenerative neurologic changes	1	Rheumatic heart disease	1
Duodenal ulcer	1	Syphilis	1
Cancers (3)			
Squamous cell carcinoma—lip	1	Basel cell carcinoma—face	2
No Pathologic Condition (45)			

Special Simple Tests: On the first visit special simple tests may be performed if indicated. These include: (1) transillumination of the breast (to differentiate cysts); (2) simple biopsy; (3) aspiration biopsy, and (4) endometrial biopsy.

Special Examinations: If roentgenographic, bronchoscopic, gastroscopic and cystoscopic examinations are symptomatically indicated, the patient is referred to the appropriate clinic.

Laboratory Tests: With the technician present, routine laboratory tests such as a complete blood count, Wassermann, sedimentation rate, urinalysis, vaginal and urethral smears by the Papanicolaou method are done on each patient on the first visit.

Social Service.—The social worker (1) makes the necessary inquiries and investigations with regard to the economic status of the patient; (2) establishes the proper connection between the clinic and the family physician on the one hand, and between the clinic and the patient's family on the other, and (3) follows up patients who have been recommended for treatment so that the clinical work may be statistically evaluated.

Follow-Up.—The patient returns in one week to be seen in conference with the five specialists. Each physician reports his observations. If there are no positive ones, the patient is given an appointment to return in one year if under the age of 40 or in six months if over 40 or if there is a strong family history of cancer. Should any unusual or persistent symptoms occur, return at any time is recommended. If the results of the examination show a pathologic condition—either local or constitutional—the specialist in that field gives a general verbal report of its nature to the patient and, if necessary, allays the patient's fears. The patient is advised to consult the family physician or is referred to the appropriate hospital clinic. The physician, on request, may obtain a detailed record of the examination.

Results.—During the eight month period that the clinic has been in operation 300 patients have been examined and the results are given in the accompanying table.

SUMMARY

The American Cancer Society by its effective educational campaign has laid the groundwork for a preventive type of cancer control. Due to the complexity and variations of the disease, the teamwork of a group is essential. This conviction led to the establishment of the Queens General Hospital Cancer Prevention and Detection Clinic. The organization of this clinic is described, and the results of the examination of the first 300 patients tabulated.

80-24 Broadway, Jackson Heights.

Clinical Notes, Suggestions and New Instruments

ACUTE UREMIA TREATED BY PERITONEAL IRRIGATION

GEORGE J. STREAN, M.D.
MORTON KORENBERG, M.D.
and
JOSEPH C. PORTNUFF, M.D.
Montreal, Canada

Removal of metabolic products by dialysis through the peritoneal membranes is not a new concept in animal experimentation. The idea that anuria and uremia might be treated in this manner was suggested by Abel and his associates[1] as early as 1914. Application of this principle to human beings was first successfully demonstrated by Fine, Frank and Seligman in 1946.[2] A case is reported in which the method described by these investigators was employed.

REPORT OF CASE

D. C., a married white woman aged 25, was admitted to the Montreal Jewish General Hospital on Nov. 28, 1946, complaining of bleeding gums for two months and purpuric spots on her upper and lower extremities for one week.

She first consulted her physician in September 1946, two months prior to her present admission. At that time she was seven months pregnant. On her first visit in September she was decidedly edematous, the edema involving her hands and face as well as her lower extremities. Urinalysis was reported to be normal, and the blood pressure was within normal limits. The fetal heart could not be heard. She had not felt any fetal movements for one week, and it was suspected that the fetus was dead. She was placed on a salt-free diet and put to bed; in about ten days the edema cleared up. In September her gums had begun to bleed, and on the two days prior to her admission the bleeding assumed serious proportions; purpuric spots appeared then for the first time. Hematologic studies before admission revealed: 4,100,000 red blood cells; hemoglobin 80 per cent; numerous platelets, which did not disintegrate normally; a bleeding time seven and one-half minutes; a clotting time over four and one-half hours; prothrombin time 42 seconds (normal 15 to 19 seconds); Rumpel-Leede test negative, and blood grouping A, Rh negative.

The patient had had three previous deliveries in another hospital: the first, in 1940, resulted in a living child after a long labor with postpartum bleeding—she received a transfusion of her husband's blood and had a febrile reaction but recovered after a stormy convalescence; the second pregnancy, in 1942, terminated in a stillbirth; the third delivery, in 1943, was spontaneous and resulted in a normal full term living infant.

The patient was admitted to this hospital with a tentative diagnosis of thrombasthenic purpura complicating pregnancy. On admission the uterus corresponded in size to a seven months gestation although the patient was at term. No fetal heartbeat could be heard, and it was assumed that the fetus was dead. She was bleeding profusely from her gums, and there were large purpuric areas both on the upper and lower extremities.

She was given a transfusion of 500 cc. of citrated whole blood, and immediately afterward had a chill, her temperature then rising to 101.6 F. The donor's blood was first reported to be group A, Rh negative, and compatible, but when it was rechecked after the reaction had occurred, it was Rh positive. Labor started soon afterward, and eleven hours following admission she was delivered spontaneously of a macerated fetus estimated at about seven months gestation. At the time of delivery catheterization yielded only 2 ounces (59 cc.) of grossly bloody urine. After the delivery, in spite of oxytocics and a firmly contracted uterus, she continued to bleed profusely, and the uterus was packed. She was given whole blood, plasma and 5 per cent dextrose in water intravenously; ascorbic acid, vitamin K and calcium gluconate were administered, and the bleeding was finally controlled after twenty-four hours. A hemogram taken thirty-six hours after admission revealed perfectly normal conditions aside from a moderate anemia, and the coagulogram remained normal thereafter.

Following delivery oliguria developed. The urine was grossly bloody and contained numerous granular casts in addition to the cellular elements. During the next three days treatment consisted of the usual measures directed toward stimulating renal function, such as intravenous fluids, diaphoresis, hot poultices to the loins, ureteral catheterization and lavage of the kidney pelves. However, oliguria persisted, the output decreased and azotemia progressed. (See the accompanying chart.)

At this time peritoneal irrigation was instituted according to the technic of Fine, Frank and Seligman. As suggested by these investigators, the composition of both the intravenous and irrigating fluids was modified as the patient's electrolytic balance dictated. Peritoneal irrigation was continued for ten days. During the last twenty-four hours of irrigation the tubes required constant manipulation due to obstruction of both the inflow and outflow tubes, and on the eleventh day the irrigation had to be discontinued. In spite of the use of penicillin, streptomycin and heparin in the irrigating solutions, both infection (minimal) and plugging of the drainage tubes occurred. Fortunately by this time sufficient renal function had returned to enable adequate clearance of the blood.

Two hours before irrigation was discontinued the patient had a generalized convulsive seizure. She was given calcium gluconate and 50 per cent dextrose intravenously, and phenobarbital sodium was administered, but the convulsions recurred at irregular intervals. Because the thought was entertained

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From the Departments of Obstetrics and Gynecology and Medicine, Montreal Jewish General Hospital.

[1] Abel, J. J.; Rowntree, L. G., and Turner, B. B.: On the Removal of Diffusible Substances from Circulating Blood of Living Animals by Dialysis. J. Pharmacol. & Exper. Therap. **5**: 275-316, 1914.

[2] Frank, H. A.; Seligman, A. M., and Fine, J.: Treatment of Uremia After Acute Renal Failure by Peritoneal irrigation, J. A. M. A. **130**: 703-705 (March 16) 1946. Fine, J.; Frank, H. A., and Seligman, A. M.: The Treatment of Acute Renal Failure by Peritoneal Irrigation, Ann. Surg. **124**: 857-878 (Nov.) 1946.

that these were caused by electrolytic shift between intracellular and extracellular fluids, isotonic sodium chloride solution was administered intravenously with dramatic cessation of the seizures. This form of therapy was discontinued for thirty-six hours, and the seizures recurred. Again they were controlled promptly with the saline solution. Thereafter, specific therapy consisted of the daily administration of sodium chloride.

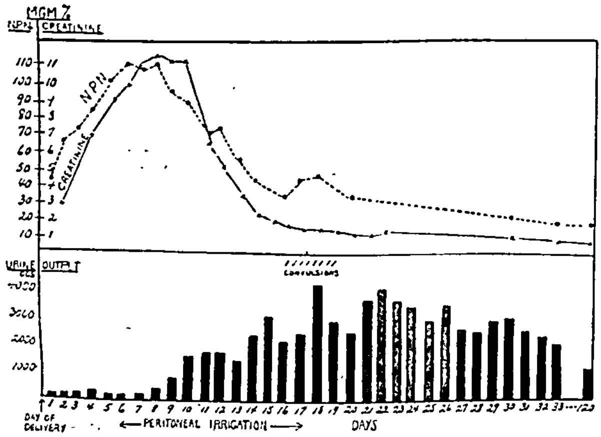
Within twenty-four hours after the institution of peritoneal irrigation, urinary output had doubled. Thereafter the output increased rapidly (see the chart). Abnormal urinary observations disappeared, but the specific gravity of the urine remained low. The patient was discharged thirty-three days after her admission. At that time her blood chemical values were completely normal and her urinary output was approximately 2,400 cc. in twenty-four hours, with a specific gravity of 1.010 to 1.013.

Now, four months after her discharge from hospital, her urinary output is normal in amount, microscopic determinations are within normal limits and the specific gravity varies up to 1.033.

On June 10, 1947, during a laparotomy on this patient for the purpose of removing a large ovarian cyst, we had an opportunity to examine the peritoneal cavity. It was completely free of adhesions.

COMMENT

Lucke has shown recently that cases of acute renal failure due to various causes, such as transfusion reaction, crush syndrome, heat stroke, toxemias of pregnancy, abruptio placentae and blackwater fever, all exhibit essentially the same renal lesion. To this condition he has applied the term "lower nephron nephrosis,"[3] because it is chiefly the lower segment of the nephron which is involved. The lesions vary from focal degeneration to necrosis and disintegration of the epithelium of Henle's loop and the distal convoluted tubules. The distribution of this necrotic and degenerative lesion and the degree of pathologic change are variable.



The treatment of acute uremia by peritoneal irrigation.

In renal shutdown once the initial shock subsides and the renal edema decreases sufficiently, diuresis begins and polyuria develops—the patient passing an unconcentrated glomerular filtrate. Since the renal damage is primarily tubular, some time must elapse before regeneration of damaged epithelium and before adequate or significant concentration of urine can occur.

In the case reported here, diuresis and blood clearance were established soon after the initiation of peritoneal irrigation. It took several months, however, before the urine concentrated to 1.030 and before it was considered safe to take the patient off a regimen of daily salt supplements.

Peritoneal irrigation in the treatment of renal failure can obviously be applied only when the pathologic changes are reversible. With this method it is possible to control the azotemia temporarily, and if the renal damage is not irreparable adequate function of the kidney will be reestablished in ten days to two weeks.

NOTE.—Since this report was written, a case of acute renal failure was successfully treated and reported by Goodyear and Beard.[4]

SUMMARY

1. The successful use of peritoneal irrigation in the treatment of a patient with acute renal failure is reported.
2. The treatment was instituted on the sixth day of oliguria and was maintained continuously for over ten days.
3. In spite of the use of penicillin, streptomycin and heparin in the irrigating solutions, both infection and plugging of the indwelling tubes occurred.
4. Generalized convulsive seizures were promptly controlled by the intravenous use of isotonic sodium chloride solution.
5. Four months after discharge, the results of urinalysis are within normal limits.

Council on Foods and Nutrition

The Council on Foods and Nutrition has authorized publication of the following article. JAMES R. WILSON, *Secretary.*

IMBALANCE AND DIETARY INTERRELATIONSHIPS IN NUTRITION

C. A. ELVEHJEM, Ph.D.
Madison, Wis.
and
WILLARD H. KREHL, Ph.D.
New Haven, Conn.

One might define, as the optimum goal of the nutritional biochemist, the development of a diet which supplies all nutrients in respect to kind and amount and in proper state of combination for all physiologic processes from conception to the death of the organism. In addition, the adequate diet must contain a minimum of injurious (toxic) factors. Such a diet would indeed be balanced, and any important deviation downward from the proper amount of a nutrient would lead to one well known kind of imbalance, reflected as deficiency disease. Since much has been written concerning this kind of imbalance, it will be considered here only incidentally.

It is primarily when and where a variety and abundance of foodstuffs are available that one can apply the criteria of a balanced diet as far as knowledge permits. Any situation, whether due to economic, political, geographic or climatic reasons, which limits the food supply, both as to choice and as to amount, obviously allows a restricted application of the concept of a "balanced diet." Under such conditions the most compelling desire of the organism is for calories. Whether the source of calories supplies the "essential factors" is largely a matter of happenstance. It is perhaps a fortuitous physiologic fact that the requirement for some factors, such as vitamin B_1, is somewhat reduced under conditions of caloric restriction. When, however, the sources of calories are limited primarily to a single food material such as polished rice or corn, we see "nutritional imbalance" at its worst, with large numbers of people afflicted with beriberi and pellagra respectively.

It is pertinent to consider for a moment the basis on which our present criteria for a balanced diet were arrived at. Most of the fundamental knowledge concerning the requirements for the various known (and as yet some unknown factors) has been obtained through numerous and laborious studies with experimental animals. In addition the clinician has made invaluable contributions by translating these experimental observations into practical studies with human patients. As data accumulated from animal feeding experiments it became obvious that the quality of a ration could not be accurately ascertained on the basis of its chemical composition alone. It became further evident that requirements for specific factors changed with alterations in diet composition and that many needed factors existed which were beyond the scope of available analytical chemical methods. The employment of highly purified rations gave perhaps the greatest impetus to the search for an elucidation of unknown vitamins, until now it is proudly stated (although always with some reservation) that at least the qualitative nutritional requirements of certain species are known. Several important lessons can be gleaned from the accumulated experimental data and are worth enumerating: (*a*) the effectiveness of nutrition in maintaining optimum health depends on the inclusion in the diet of the least known as well as the best known nutrient, (*b*) it is desirable to employ numerous species of animals in nutritional research, since nutritional requirements vary both in kind and in amount from species to species and (*c*) the application of accumulated experience to problems of human nutrition will certainly be on a firmer basis when the nutritional requirements of experimental animals are known.

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[3] Lucke, B.: Lower Nephron Nephrosis, Mil. Surgeon **99**: 371-396 (Nov.) 1946.

[4] Goodyear, W. E., and Beard, D. E.: The Successful Treatment of Acute Renal Failure by Peritoneal Irrigation, J. A. M. A. **133**: 1208-1210 (April 19) 1947.

One of the important and practical achievements in nutrition is the development of the tables of recommended dietary allowances[1] prepared by the Food and Nutrition Board of the National Research Council. These tables were developed largely by the application of "cooperant reason" to the numerous published nutritional observations on animals and human beings. It will be noted that the board uses the term recommended allowances rather than standards to "avoid any implication of finality." It is difficult to make an adequate evaluation of the service that this board has rendered, since in addition to establishing certain "yardsticks" of good nutrition it has intelligently focused attention on the ever important problem of "adequate nutrition for all." That such attention is important is sadly apparent in the continued evidence for "inadequate diets and nutritional deficiencies" in the United States.[2]

Although "synthetic diets" have proved invaluable in determining what and about how much vitamin, amino acid or fatty acid is required by various animals, it is becoming increasingly apparent that the requirements for these specific materials both qualitatively and quantitatively can be definitely altered when fed as components of a foodstuff. That man can derive his nutrition, at least for a short time, on a synthetic diet is known;[3] however, for the most part man's diet is composed of natural materials, and for this reason a new approach to nutritional research awaits further investigation, namely the study of the effect of these various materials and the kind and percentage of dietary components on the requirement of those factors which are required for the most part in relatively small amounts.

One potentially important aspect of the matter of altered vitamin requirement induced by natural materials is indicated by Woolley's[4] studies on certain relationships of chemical structure to biologic activity. It has been shown that certain chemical substances which have a structural relationship to various required biologic compounds may cause, when administered, specific signs of deficiency diseases which can be "reversed by the metabolites in question when given in adequate amounts." Extensive evidence for the natural existence for such "inhibitors" is not available, but this may be due primarily to lack of knowledge and experimental technics for demonstrating their existence. That such materials can exist under certain specified conditions is demonstrated by the vitamin K deficiency caused by dicumarin when spoiled sweet clover hay is eaten by cattle. It must be emphasized that the activity of these "anti compounds" is presumably due to the fact that they closely resemble the required biologic compound in chemical structure. Whether all "inhibitor" materials operate via the mechanism postulated by Woolley remains to be proved.

Another general factor which may result in imbalance in nutrition is the presence of natural toxicants in food. Materials in food, whether naturally present or as the result of processing, such as fluorine, selenium, lead, arsenic and copper, appear high on the list of intoxicants which may seriously impair the physiology of the organism when they are ingested at too high a level. The presence of the toxic agent gossypol in certain cottonseed meals must be considered when this feed is employed in animal rations. Under the same category must be placed certain wheat glutens and wheat products which are known to produce the disease known as canine hysteria.[5] It has been shown recently, however, that wheat flour is effective in producing this disease as a result of its treatment with agene (NCl_3), a common agent for bleaching and improving flour.[6] Whether agene induces canine hysteria directly or because of changes it produces in the wheat gluten is not certain; nor is it certain that additional factors are not involved.

The fact that the consumption of certain legumes such as fava beans, djenkol beans and lathyrus peas produce untoward results is well known and need not be discussed further.

While the nutritional imbalance and biochemical defects due to such intoxicants can be readily produced, explanations of their mechanisms are not well known. Even less understood are the changes in requirement and production of deficiencies and altered physiology which may result from seemingly innocuous modifications of such factors as the type of carbohydrate in the ration, balance of inorganic elements, amount and kind of protein or amino acid(s), qualitative and quantitative changes of fat and fatty acids in the diets, and general vitamin level. In addition one must consider the interrelationships known to exist between nutrients.

The foregoing factors are known to induce "imbalances" in nutrition which are considerably more difficult to explain than the mere omission of a specific required substance, and these somewhat subtle changes will be considered at some length.

MINERAL IMBALANCE

Because of the importance of calcium and phosphorus in nutrition, some of the significant factors concerning their availability as affected by diet are worthy of

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1. Recommended Dietary Allowances (Revised 1945), National Research Council Reprint and Circular Series number 122, August 1945.

2. Inadequate Diets and Nutritional Deficiencies in the United States, Bull. National Research Council 100, November 1943.

3. Olmstead, W. H.; Hartford, C. G., and Hampton, S. F.: Use of a Synthetic Diet for Food Allergy and Typhoid, Arch. Int. Med. **73**: 341 (April) 1944.

4. Woolley, D. W.: Some New Aspects of the Relationship of Chemical Structures to Biological Activity, Science **100**: 579, 1944.

5. Wagner, J. R., and Elvehjem, C. A.: A Study of Canine Hysteria Produced by Feeding Certain Baked Dog Foods and Wheat Glutin Flour, J. Nutrition **28**: 431, 1944. Melnick, D., and Cowgill, G. R.: The Toxicity of High-Gliadin Diets: Studies on the Dog and on the Rat, ibid. **14**: 401, 1937.

6. Mellanby, Edward: Diet and Canine Hysteria: Experimental Production, Brit. M. J. **2**: 885 (Dec. 14) 1946.

consideration. Of the important factors which favorably influence the absorption and utilization of calcium, magnesium and phosphorus, an acid reaction in the intestine ranks high in importance.

That vitamin D is important in calcium utilization may be explained at least in part by the little understood fact that it tends to favor the production of an acid p_H in the intestine. In this connection another recently elaborated role of vitamin D is the observation[7] that it has a favorable influence on the utilization of the phosphorus of phytin, the availability of which has been the subject of considerable controversy.

Moderate quantities of dietary fat may also play a favorable role in promoting an acid intestinal reaction. Another dietary component which promotes such a reaction is lactose, which probably mediates its influence through the establishment of an aciduric bacterial flora. Is it not interesting that when the need for calcium and phosphorus assimilation is greatest (i. e. the growing child), the major, normal dietary component is milk, which is not only a good source of these minerals but contains lactose and is high in fat? Dextrin and corn starch also have an effect similar to but less than lactose.

Another important consideration concerning the possible imbalance of diets due to minerals is the significance of the calcium-phosphorus ratio. From the considerable work that has been done on this subject, it may be concluded that both calcium and phosphorus may be lost from the body and excreted in the event of any decided abnormality of the calcium: phosphorus ratio. There is considerable variation in opinion as to just what the optimum ratio should be, and it certainly varies with the nutritive requirement at different ages (i. e.) from 1.5:1 to 2:1 for infants, to about 1:1 for older children.[8] Milk which may be considered a sound basis for good nutrition has a Ca:P ratio of about 1.2:1.

Other factors which may adversely affect calcium utilization are excessive amounts of magnesium in the diet and the well known calcium combining action of the oxalate in certain foods.

In considering the other minerals which may interfere with phosphorus utilization one could conclude that certain cations such as iron and manganese for practical examples, which form insoluble phosphate compounds in the intestinal tract, may, if fed in sufficient concentration, lead to impaired phosphorus utilization. Likewise excesses of phosphorus in the diet can interfere with the utilization of these cations. McCance[9] for instance found that both phosphate and phytin interfered perceptibly with iron absorption, although the effect of phosphate was not as great as that of phytate.

In relation to calcium utilization, it was shown[10] that diets high in protein notably favored the absorption of calcium and also resulted in increased magnesium absorption. This observation might have significance in locations where protein comprises a major portion of the diet, and calcium intake is limited.

The effect of a general mineral imbalance is well illustrated in the recent observation[11] that a partial substitution of casein with whey protein in a formula simulating human milk resulted in a retardation of rat growth. This result was not in accord with the well known superior biologic value of lactalbumin (in whey) over casein. This discrepancy was made clear however when, by dialysis of the whey, its minerals were removed and more favorable growth ensued. When the minerals which had been dialyzed from the whey were ashed and reintroduced in the ration, poor growth again resulted.

INFLUENCE OF FATS

It has been indicated that dietary fat may assist in calcium and phosphorus utilization by favoring a more acid reaction in the intestinal tract. In addition it is increasingly apparent that fats may have other important roles in nutrition beyond the fact that they assist in the absorption of and act as carriers for the fat soluble vitamins. The human body can utilize 93 to 98 per cent of most common fats and it can tolerate quantities of fat equivalent to at least a third of the average daily energy consumption.[12] No definite opinion has been crystallized as to the optimum level of dietary fat; suggestions have been made favoring levels just sufficient to supply the essential fatty acids up to an amount equivalent to 25 or 30 per cent of the daily intake. Even greater divergence of opinion is evident concerning the type of fat which should be employed in the diet. The numerous controversial observations[13] regarding the nutritional superiority of butter fat over certain vegetable fats are sufficient to illustrate this point. The recent report[14] that vaccenic acid (C18, Δ 11, 12 elaidinic acid), present in summer butter, has growth promoting properties offers the most concrete evidence to date in support of butterfat superiority for rat growth. It remains to be seen whether this observation will be confirmed or lead to further controversy.

Boutwell and his associates[15] in extensive experiments have consistently observed that when lactose is used as the sole carbohydrate, or when the general level of B complex vitamins is employed at a comparatively low level, butterfat is superior to corn oil in effecting rat growth. Even greater growth differences were evident when younger rats (less than 21 days old) were used at the start of the experiment.[16] Certainly, some of the observed differences between butterfat and corn oil may be explained on the different effects of these respective fats on the intestinal flora.

To present the other side of this controversy, Deuel and his associates[17] observed that "if fat per se is required for fertility and pregnancy, its requirement may be equally satisfied by the various vegetable fats as by butter. From the standpoint of lactation, as judged by the survival of the litter and the weight of the young at weaning time, the different fats were also equally effective." Interesting as this problem is, its final solution can be reached only through further research.

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[7] Boutwell, R. K.; Geyer, R. P.; Halverson, A. W., and Hart, E. B.: The Availability of Wheat Bran Phosphorus for the Rat, J. Biol. Chem. **162**: 151, 1946.

[8] Stearns, Genevieve: The Significance of the Retention Ratio of Calcium: Phosphorus in Infants and in Children, Am. J. Dis. Child. **42**: 749 (Oct.) 1931.

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[10] McCance, R. W.; Widdowson, E. M., and Lehmann, H.: The Effect of Protein Intake on the Absorption of Calcium and Magnesium, Biochem. J. **36**: 6°6, 1942.

[11] Daniel, F. K., and Harvey, E. H.: Some Observations on the Nutritional Value of Dialyzed Whey Solids, J. Nutrition **33**: 429, 1947.

[12] Longworthy, C. A.: The Digestibility of Fats, J. Indust. & Engin. Chem. **15**: 276, 1923.

[13] Deuel, H. J., Jr.; Movitt, E.; Hallman, L. F., and Mattson, F.: Growth Rate and Efficiency of Conversion of Various Diets to Tissue, J. Nutrition **27**: 107, 1944. Boutwell, Geyer, Elvehjem and Hart.[16]

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[16] Boutwell, R. K.; Geyer, R. P.; Elvehjem, C. A., and Hart, E. B.: Further Studies on the Growth Promoting Value of Butter Fat, J. Dairy Sc. **26**: 429, 1943.

[17] Deuel, H. J., Jr.; Movitt, E., and Hallman, L. F.: The Negative Effect of Different Fats on Fertility and Lactation in the Rat, J. Nutrition **27**: 509, 1944.

Perhaps more pertinent to the topic under consideration is the relationship between dietary fats and other nutrients. For example, the presence of rancid fat in the diet produces some interesting effects which deserve mention. From the accumulated literature on this subject it appears that there is significant destruction of vitamin A as a result of rancid dietary fat. This destruction seems to be associated with intense peroxide formation, although it has been concluded [18] that intermediates of fatty acid peroxidation are the active agents involved and not the peroxides themselves. It has been shown too [19] that oxidative changes which accompany the development of rancidity in unsaturated fats destroy vitamin E.

That high fat diets exhibit a striking effect on the requirement of certain members of the B complex is well known. Mannering [20] has shown for example that fat at a level of 25 and 40 per cent of the diet materially increased the riboflavin requirement of the rat. This effect may be mediated through the impairment of riboflavin synthesis by intestinal bacteria as an unfavorable result of the high fat level. It is interesting to note in this connection that milk, a high fat food, is one of the richest natural sources of riboflavin.

The thiamine sparing action of fat has been adequately reviewed,[21] but in view of recent experiments [22] this sparing action must be considered with somewhat greater reservation, since it can be shown that the young, growing rat develops the typical symptoms of polyneuritis actually more clearly on B_1 deficient high fat diets than on isocaloric carbohydrate diets. This observation is certainly more consistent with the increasing evidence in support of the tricarboxylic acid cycle as a pathway for the oxidation of fatty acids as well as carbohydrate. This being the case, thiamine should be as important in fat metabolism as in carbohydrate metabolism.

Evidence is also available [22] which indicates that the growth of rats on pantothenic acid deficient diets can be greatly improved by the isocaloric replacement of the carbohydrate of the diet with fat. In addition, the difference obtained is greater when the protein level of the diet is high than when it is low.

On the other hand, the severe skin symptoms of egg white induced biotin deficiency can be produced much more rapidly when fat replaces the carbohydrate.[22] This cannot be considered as a direct adverse effect of fat because in this case the skin symptom evidences of the biotin deficiency appear more quickly, probably because the rat's growth rate is better on the high fat diet and hence the stores of the vitamin are exhausted sooner.

The recent demonstration [23] that a nicotinic acid deficiency in the rat is more readily produced on a low fat diet and that 30 per cent of fat in the diet tends to counteract this deficiency is another example of the vitamin sparing action of fat.

It was observed early in the work on vitamin B_6 that the acrodynia symptoms associated with this deficiency were more apparent when fat was omitted from the diet. This observation was more particularly related to the presence of certain fatty acids in the diet, especially linoleic acid.

The relationship between high fat diets and the requirement of choline and labile methyl groups is indicated by the fact that a simultaneous deficiency of these two factors in high fat diets results in more rapid fatty infiltration and necrosis of the liver, with frequent findings of hemorrhagic degeneration of the kidney.

It is understandable that the numerous favorable effects of high fat diets should be interpreted from the point of view of the known role of certain of the B complex vitamins involved in carbohydrate metabolism, but to assume that these vitamins are not as important in the metabolism of fat may be merely a reflection of our ignorance of the biochemical transformations involved in the ultimate breakdown of fat.

A fresh point of view concerning the value of fat in the diet is based on the finding of Forbes and his associates [24] that, on a mixed diet containing fat, animals have extra calories for work, growth or storage. These extra calories are not available when fat is omitted from the diet even though an isocaloric mixture of carbohydrate and protein is supplied. Fat apparently confers efficiency of utilization of food energy on both growing and mature rats. The observed retention of nitrogen as tissue protein was over 10 per cent greater on a 30 per cent than on a 2 per cent fat diet. In other words, the energy cost of metabolizing diets providing constant protein intake decreased with increasing ratio of fat to carbohydrate. Deuel [25] has recently concluded that the favorable effect of diets containing fat is due to several factors: (*a*) the greater intake in terms of energy values of diets containing fat and (*b*) greater efficiency of utilization.

The value of dietary fat in the utilization of certain carbohydrates is indicated from the work of Schantz and his associates,[26] who showed that the 3 or 4 per cent of fat naturally present in milk is necessary if the animal is to make complete utilization of the lactose or, more specifically, of galactose. Geyer and his associates,[27] in more recent experiments on this subject, conclude that (*a*) fat in some way influences galactose utilization, (*b*) galactose utilization is appreciably decreased as the percentage in the diet is increased and (*c*) added glucose does not lower galactose excretion as does fat.

Since approximately 50 per cent of the calories of whole milk are derived from fat, it is obvious that the use of milk as the sole source of calories will not result in physiologic embarrassment due to the failure of galactose utilization (except in certain rare cases). Nature would indeed be cruel to permit anything but this condition to exist, since infants in particular obtain nearly all their calories from milk.

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Handler,[28] writing on this subject, considers that there is a biochemical defect which underlies the failure of lactose (galactose) utilization and indicates that this is due to an impairment of normal glucose metabolism, although no definite statement is given as to the nature of this disturbance.

One must consider that at high levels of galactose ingestion the ability of the organism to convert galactose to glucose is rapidly exceeded, in which event the excess is excreted. The only "biochemical defect" then according to this interpretation would be one of overdosage.

Whether or not fat or any of the intermediates of fat metabolism exert a biochemical note in the reactions involved in the conversion of galactose to glucose to glycogen can be ascertained only after additional research.

CARBOHYDRATE: RELATIONSHIPS TO VITAMIN REQUIREMENTS

As a readily available and most economical source of energy, carbohydrate is of primary importance in nutrition. About 50 or 60 per cent of the calories of the "average diet" are derived from carbohydrate, although wide deviations from this amount are possible, witness the low carbohydrate intake of the Eskimo and the reduced intake of the person with diabetes. Using milk as a nutritional standard again, it can be seen that in this food carbohydrate comprises only about 30 per cent of the total calories. McCollum [29] states that "the minimum amount of carbohydrate necessary for maintenance of life and the prevention of ketosis is from 10 to 15 per cent of the total energy requirement." Species variation may modify these figures to some extent.

Aside from observations, such as the different absorption rates of hexose sugars,[30] the general unavailability of pentoses and cellulose for man, and the aforementioned findings concerning galactose and lactose, very little information is available concerning the comparative nutritional qualities of the several types of carbohydrate which man can utilize.

It is indeed a fortuitous economic fact that ruminants, such as the cow, have a type of digestive system which permits utilization of a substantial portion of dietary cellulose. This fact is a result of the favorable action of cellulose digesting organisms in the rumen which are capable of breaking down cellulose to available hexoses.

This particular mechanism of bacterial action is not present in the human digestive tract, but another type of bacterial synthesis can undoubtedly act in a beneficial manner for man. The extent to which a favorable bacterial synthetic mechanism can assist man in supplying certain factors may depend very importantly on the type of carbohydrate employed in the diet, if the experiments with animals can serve as a guide. Fridericia [31] was the first to observe that animals can grow satisfactorily on certain diets deficient in the "B vitamin." This condition, known as refection, can be readily produced by giving diets which contain raw potato starch as the carbohydrate. Cooked potato starch on the other hand does not cause refection. These observations have been confirmed by numerous workers, and extended applications of the phenomenon have been made.

The fact that the growth and appearance of experimental animals on diets deficient in certain members of the B complex vitamins can vary considerably, depending on the type of carbohydrate used, indicates that there are decided differences in the nutritional value of carbohydrates not reflected by their similar energy values.

Results common to all the experiments that will be cited can be summarized by saying that, regardless of which vitamin was investigated, its requirement was reduced in all cases when relatively insoluble carbohydrates, such as dextrin or starch, were used in the diet. Lactose has also given similar results in many cases, although not so accentuated, and surprisingly enough in some cases diets containing glucose have favorably influenced the vitamin requirement. In all cases when sucrose was the dietary carbohydrate of choice, the vitamin requirement was highest. One might place the carbohydrates in the following decreasing order in their favorable effect on vitamin requirement: dextrin, starch, lactose, glucose, sucrose, although this varies with different vitamins.

It seems reasonable to the proponents of the mechanism of intestinal synthesis that certain carbohydrates, owing to their slower breakdown and absorption from the intestinal tract, provide a suitable substrate for the development of a type of bacterial flora which may contribute significant quantities of vitamins to the host. Mannering [20] states for example that, "when the riboflavin intake is suboptimal, rats receiving a diet rich in dextrin or corn starch show greater weight increases than do animals receiving diets characterized by their content of sucrose, cellulose, lactose or lard. Lactose is not entirely without effect in this respect."

In a recent study Krehl and Carvalho [22] showed that the use of dextrin in pantothenic acid deficient diets greatly improved rat growth. This favorable synthesis of pantothenic acid could be correlated with higher levels of this vitamin in cecal contents, liver and muscle tissue and could be further related to much less hypertrophy and hemorrhage of the adrenal and better protection against involution of the thymus in comparison with deficient animals which received sucrose as the carbohydrate. Likewise the onset of symptoms of egg white induced biotin deficiency were delayed when dextrin was used as the carbohydrate instead of sucrose, despite the fact that the dextrin fed rats grew better, which would tend to increase the demand for biotin.

Good evidence is available [32] to support the idea that pyridoxine is synthesized by intestinal bacteria when the sucrose of the diet is replaced by dextrin. That this mechanism may be available to man may in part explain the limited evidence for pyridoxine deficiency in this species.

In a study on the effect of diet on the response of chicks to folic acid, Luckey and his associates [33] report that the response to folic acid was least with high fat diets or with diets containing glucose, sucrose or starch as the sole carbohydrate. The best response to the

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vitamin was obtained with high protein, low fat diets or with diets containing corn meal or dextrin. It is difficult to ascertain why in this case differences between corn starch and corn meal and dextrin were observed. A possible explanation might be due to the rather undesirable physical aspects of diets high in corn starch. It seems that several interrelating factors may be involved in influencing the effect of diet on the folic acid requirement of the chick.

Such a complexity between diet composition and vitamin requirement is well demonstrated in the interesting series of experiments [34] which have established certain conditions under which a nicotinic acid deficiency can be induced in the rat, an animal which had normally been considered not to require a dietary source of this vitamin.

It was first shown that if 40 parts of the sucrose of a "synthetic ration" are replaced with corn grits, the nicotinic acid requirement of the growing dog is increased from about 0.3 mg. per kilogram of body weight to about 1 mg., despite the fact that corn grits contribute some nicotinic acid to the diet. When this study was extended to the rat by replacing 40 per cent of a synthetic diet with corn or corn grits, which reduced the casein level of the corn supplemented diet to 9 per cent, a retardation of growth was demonstrated. This growth depression could be completely counteracted by the further addition of nicotinic acid to the diet, again despite the fact that in these experiments the corn and corn grits contributed 0.8 and 0.4 mg. of nicotinic acid per hundred grams of diet, respectively.

It was recognized in this work that rat growth on a 9 per cent casein synthetic diet deficient in nicotinic acid is not optimum and generally is improved by the addition to the diet of amounts of nicotinic acid up to 1 mg. per hundred grams. If by this addition of nicotinic acid growth is improved, why does not a similar amount of nicotinic acid as represented in corn grits, for example, likewise improve growth, particularly when one considers that the total protein and type of carbohydrate contributed by the corn should have some supplementary action to the diet? Actually a growth depression can be observed.

Although the foregoing observations have been confirmed in other laboratories, a criticism [35] has been made of these findings on the basis that the growth of rats is poor on a 9 per cent casein diet with or without the inclusion of corn and therefore corn has no "specific deleterious effect." In fact, in this particular experiment the growth results obtained on the basal 9 per cent casein diet were so poor (less than 3 Gm. per week for eight weeks) as to obviate a very fair comparison. It is interesting to note though that in these experiments the addition of crystalline nicotinic acid also evoked a better growth response than did corn alone, which again is difficult to explain since in some of these cases at least nearly as much nicotinic acid must have been contained in the added corn as was added in crystalline form. Whether or not corn has a "specific deleterious action" quite largely depends on extenuating circumstances. If, under defined conditions, one compares corn with certain other cereal grains such as polished rice, which closely resembles corn in its nicotinic acid and tryptophan content (to be discussed) one finds corn decidedly inferior, using the growth of young rats as a criterion. Further evidence for the observed action of corn rations is indicated by the demonstration that corn contains a pellagragenic agent which can be extracted and prepared in fairly high concentration. This "pellagragenic material" from corn when fed to mice produced a manifest growth depression. Interestingly, corn alone does not have this effect in mice.[36]

PROTEINS AND AMINO ACIDS IN NUTRITIONAL IMBALANCE

In studying the effect of corn on the growth of rats it was soon learned that, when the casein level of the diet was increased, good growth resulted whether or not corn was used in the diet. This seemed to indicate that in conjunction with the nicotinic acid deficiency a concomitant amino acid deficiency might be involved. Since corn is notably deficient in tryptophan, this amino acid was added to the corn supplemented ration and, surprisingly enough, proved to be as effective as nicotinic acid in promoting growth. This fact indicated then an interrelationship between a vitamin, nicotinic acid, and an amino acid, tryptophan. As already stated, rather specific conditions are needed for the production of this nicotinic acid deficiency in the rat. When, for example, dextrin, corn starch itself or even glucose is used as the dietary carbohydrate in place of sucrose there is little growth inhibition from corn. A low general level of vitamins accentuated the action of corn rations in retarding rat growth. The favorable effect of a carbohydrate such as dextrin has been interpreted as being due to the establishment of an intestinal flora which augments nicotinic acid synthesis. Since, as has been mentioned, high levels of dietary fat tend to reduce the nicotinic acid requirement of the rat,[23] the inclusion of 30 per cent of fat in the diet largely but not entirely eliminates the growth retardation induced by corn.[35] Whether this effect can be likewise observed in man, whose requirement for nicotinic acid is probably much higher than that of the rat, must be questioned, particularly in view of the fact that pellagra producing diets in the South generally contain liberal amounts of fat from "sowbelly."

A recent extension of the effect of corn rations on the nicotinic acid requirement has been made with the pig [37] in which it was observed that the use of corn as a major part of the ration resulted in a nicotinic acid deficiency even though the percentage of dietary protein was relatively high. "The supplementation of the low protein corn rations with tryptophan produced animals whose external appearance was normal in every respect." This supplementation also resulted in increased efficiency of food utilization.

Perhaps more interesting than the effect of corn supplemented rations on the dietary nicotinic acid-tryptophan requirement of the rat are the observations [38] that a completely analogous syndrome can be produced by adding tryptophan free proteins or acid hydrolysates of protein (tryptophan free) to basal rations which contain 9 per cent casein and no nicotinic acid. For example, a protein such as zein, the chief protein from corn, when added to such a ration at a level of 3 per cent, produces a nicotinic acid deficiency in the rat which can be completely counteracted by either tryptophan or nicotinic acid. The addition of gelatin at levels of 3 or 6 per cent produces a similar result.

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[34] Krehl, Sarma, Teply and Elvehjem.[23] Krehl, Sarma and Elvehjem.[24] Krehl, de la Huerga and Elvehjem.[44] Krehl, Henderson, de la Huerga and Elvehjem.[25]

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What are the peculiarities of the amino acid mixture in acid hydrolysates of protein or the amino acid makeup of tryptophan free proteins that induce such effect? No precise answer can be given on this point although it has been shown that the amino acid aminoacetic acid (glycine) is one (of perhaps many) which is capable of inducing an increased nicotinic acid requirement in the rat. Evidence is available,[39] however, to show that this growth inhibiting effect due to amino acids is not specific for any one particular amino acid but may in fact be produced by a mixture of synthetic amino acids equivalent to 2 per cent of an acid hydrolysate of casein. It is possible that the growth inhibition may be due to alterations in the intestinal flora, since the effect of aminoacetic acid is eliminated when dextrin is used as the carbohydrate in place of sucrose. Of course a mechanism involving tissue synthesis of nicotinic acid might very well be involved, or perhaps both of these mechanisms are concerned in this complex interrelationship between nicotinic acid and tryptophan. Only additional research can answer these questions.

That other species are susceptible to the effects described can be seen from work with chicks [40] in which it was shown that the nicotinic acid requirement of the chick was influenced by the kind and amount of protein used in the ration. Gelatin produced unfavorable growth results when nicotinic acid was omitted from the diet, and this growth depression could be completely counteracted with either tryptophan or nicotinic acid. When combinations of the amino acids arginine, aminoacetic acid and alanine were used, nicotinic acid deficiency symptoms were also produced.

No definite evidence is as yet available which completely elucidates the mechanism of the niacin-tryptophan relationship. As stated, certain evidence strongly supports the idea that the intestinal flora may contribute importantly to nicotinic acid synthesis. Another line of evidence has been advanced which supports the contention that tryptophan may serve as a metabolic precursor of nicotinic acid. This is based on the finding [41] that the excretion of N^1-methylnicotinamide, the chief urinary excretory product of nicotinic acid metabolism, is much increased following the administration of l(-) or dl tryptophan to the rat. Such a hypothesis is certainly attractive, and the correlation between N^1-methylnicotinamide excretion and tryptophan ingestion has been extended to a number of species, including man. Work with Neurospora mutants however has so far failed to establish any direct mechanism or metabolic pathway from tryptophan to nicotinic acid,[42] although a relationship between this vitamin and tryptophan similar to the rat and other species is well established for certain of these mutants. This of course does not prove that a direct synthesis of nicotinic acid from tryptophan does not exist.

The recent observation [43] that pyridoxine deficient animals excrete less N^1-methylnicotinamide after the administration of tryptophan may help to throw some light on the indicated metabolic conversion of tryptophan to nicotinic acid and at least "indicates that the normal formation of xanthurenic acid in B_6 deficiency is not responsible for the impaired tryptophan to nicotinic acid transformation." This observation might in a sense be considered an extension of the earlier study by Singal and his associates, who observed an increased excretion of N^1-methylnicotinamide as a result of administering pyridoxine to normal and nicotinic acid deficient dogs.

It might be pointed out that, since niacin may exert a tryptophan sparing action, possibly because of its favorable influence on tryptophan utilization,[44] the administration of tryptophan might correspondingly spare or reduce the metabolic need for the vitamin so that the excess not needed for other purposes is then methylated and excreted.

Aside from the theoretical aspects of why both tryptophan and nicotinic acid have similar growth promoting effects, it is gratifying to note that recent experiments with human beings [45] indicate that "tryptophan may be an important precursor of nicotinic acid in the human as well as the rat and may explain the antipellagragenic activity of certain foods such as milk which are low in nicotinic acid but rich in good protein." It might be noted that here no consideration is given to the known favorable effect of milk on the synthetic mechanism of the bacterial flora in experimental animals at least.

The relationship between proteins or amino acids and vitamins is also indicated in the evident importance of pyridoxine in the metabolism of amino acids. The vitamin B_6 group of vitamins has been shown to be important in two fundamental reactions involving amino acids: (*a*) catalyzing transamination [46] and (*b*) catalyzing the decarboxylation of certain amino acids.[47]

A specific role of pyridoxine seems to be involved in tryptophan metabolism,[48] in which case the administration of 1(-)tryptophan to pyridoxine deficient rats results in the excretion of xanthurenic acid rather than kynurenic acid, the normal end product of tryptophan metabolism. Kynurenic acid and more interestingly d(+) tryptophan do not lead to xanthurenic acid excretion in B_6 deficiency; xanthurenic acid passes through the pyridoxine deficient rat unchanged.

That the level of dietary protein is important in determining the pyridoxine requirement is evident from the observation [49] that a diet containing a 60 per cent level of casein produced much earlier death in mice than one in which the protein level was 10 per cent. "Although pyridoxine restored growth and minimized the excretion of chromogen on both diets, about three times as much pyridoxine was required on 60 per cent of casein as when 20 per cent was fed."

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Because of the ever increasing interest in the use of synthetic amino acids in nutritional studies, some mention must be made of certain recent experiments made with these materials. The long chain of research on the qualitative and quantitative amino acid requirement stemming mostly from the laboratory of Rose has culminated in the successful use of diets which can be entirely characterized in regard to their amino acid makeup. As might be expected with such relatively short time experience with amino acids there is no complete agreement as to the number or relative amounts of the so-called "essential" amino acids required by the various species studied. Clarification of these disagreements should come rapidly as a result of the intensive research in this field. A generalization that might be made concerning amino acids and their application in nutritional studies can be gleaned from the observation [50] that rats fed a mixture of amino acids gained weight rapidly and usually exhibited weight gains in ten days as great as on diets containing an isonitrogenous quantity of casein. The omission of any of the essential amino acids from the diet resulted in a prompt loss in appetite followed by a weight loss. It must be noted, however, that these experiments were conducted with adult rats, and evidence is available [51] which shows that the young growing rat does not do as well on mixtures of amino acids as on casein in equivalent amounts. Further evidence of this nature is observed with mice, and the factor which induces better growth under these conditions has been designated strepogenin,[52] which is a peptide-like material found in certain intact proteins or incomplete protein hydrolysates. Whether this factor has practical significance in human nutrition is difficult to ascertain. It is known, however, that properly prepared mixtures of the crystalline amino acids are adequate for the protein nitrogen needs and definite weight gain of patients over "long" periods of time. Given parenterally as the sole source of protein nitrogen intake, these amino acids are adequate for nitrogen balance in human patients.[53] In these same experiments no toxicity to the unnatural forms of seven essential amino acids could be demonstrated. Although the amino acids were generally well tolerated when given parenterally, phenylalanine had a definitely limited effect on tolerance. It has been shown however [54] that mixtures of natural amino acids can be given to dogs at a much higher intravenous rate without inducing vomiting than can similar mixtures containing racemic amino acids. In these experiments aminoacetic acid increased the dog's tolerance to the infusion of certain of the mixtures containing racemic amino acids.

Lack of agreement is evident concerning the undesirable effects of the unnatural forms of certain amino acids for rat growth. Factors such as the relative amount of the respective amino acid used and the type of carbohydrate employed in the diet may explain a large part of the differences observed. Most of the evidence supports the contention that the unnatural forms of the essential amino acids at least do not significantly impair the animal's performance. It has been shown that dl serine, unlike the natural isomer, produces proteinuria, kidney and liver damage and high mortality in rats.[55] Interestingly enough, the administration of ample amounts of B vitamins substantially reduced these effects. Of the vitamins tested, pyridoxine proved most effective in its protective action against dl serine.

Another point of disagreement has arisen as a result of the several studies on the relative lipotropic efficacy of methionine when fed as the free amino acid and as a constituent of an intact dietary protein. A reasonable explanation for the conflicting conclusions, and well illustrative of the present theme that many interrelated factors may alter the dietary requirement, is offered in the finding that essential amino acids have a definite effect on the lipotropic efficacy of methionine.[56] "No significant difference was noted in the lipotropic effect exerted by methionine when fed as the free amino acid or in casein, provided the essential amino acids were approximately equalized in the two diets."

The great interest in amino acids has revived in large measure the older problem concerning the biologic value of proteins. The studies on this problem may in general be summarized by the observation [57] that "the comparison of the chemical and biologic methods supports the hypothesis that the biologic value of a protein is due to its content of essential amino acid and is limited by the one essential amino acid which is present in the least amount relative to body requirements." One of course should add that, as indicated earlier, other components of the diet may play an important role in determining the biologic value of certain proteins. Then too, it is now recognized that there are certain as yet unknown factor(s) accompanying some proteins which have definite effects on such vital physiologic processes as growth, reproduction and lactation in experimental animals.

That certain amino acids may play more or less specific roles in determining the biologic value of a protein is indicated in the observed effectiveness of methionine in sparing nitrogen. It has been shown for example [58] that methionine added to diets which contain egg white and casein respectively spared nitrogen; this sparing action was more obvious with the latter protein. The sparing action is apparently produced through a reduction in the excretion of urea nitrogen.

VITAMINS AND VITAMIN INTERRELATIONSHIPS

Despite their great physiologic activity in small amounts, vitamins as such are relatively "nontoxic" at least in several multiples of even large therapeutic doses, and an excessive intake of a vitamin results for the most part in its excretion in the urine unchanged. This is in sharp contrast to most "drugs" and hence more or less places the vitamins in a separate category, at least from the aforementioned standpoints.

It has been shown though that, in the case of the B complex vitamins, treatment with the single vitamin indicated by the predominant signs in a patient with a deficiency disease may result in the precipitation of severe manifestations of other deficiencies. This would argue in favor of the rational use of B complex mixtures in the treatment of deficiency diseases, since in most cases a complex deficiency is present, though not always readily apparent by the available clinical methods.

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Examples of some of the more obvious interrelationships of vitamins (though by no means completely understood) are (*a*) the vitamin A activity of certain carotenoid pigments, (*b*) the antirachitic action of the several vitamin D compounds and (*c*) the effectiveness of the several compounds having vitamin K activity in promoting blood coagulation. Other examples in the B complex group of vitamins are seen in the similarity of activity exhibited by the B_6 group (pyridoxine, pyridoxal and pyridoxamine) and the effectiveness of niacin, niacinamide and nikethamide (di-ethyl nicotinamide) in pellagra.

It is understood, however, that these various compounds with similar physiologic activity are active because certain essential and fundamental similarities exist in their chemical structure

Illustrative of another kind of vitamin interrelationship (many of which exist and probably more will be discovered) is the observation [59] that the utilization of tocopherols in patients suffering from muscle dystrophy was enhanced by the simultaneous injection of inositol. It has been suggested that tocopherol forms a condensation product with inositol in the gastrointestinal tract and that the inherent defect in muscular dystrophy is in a deficiency of this condensation product.

Other work with alpha-tocopherol [60] indicates that it improves the effectiveness of suboptimal quantities of linoleic acid in preventing or curing the essential fatty acid deficiency syndrome in the rat. More interesting, and possibly of some practical importance, is the recent observation [61] that dietary supplementation with alpha-tocopherol favorably influences milk-fat concentration and total "4 per cent milk" production in the dairy cow, although simultaneous use of vitamin A supplementation negates this effect of tocopherol. Vitamin A supplementation alone increased the vitamin A content of the milk "at the partial expense of the carotene content," but the combined supplementation of vitamins E and A "allowed the A content of the milk to rise without a pronounced fall of carotene."

Another practical relationship of vitamins is demonstrated in the finding that, although cattle are able to synthesize vitamin C to meet their requirements, the amount of synthesis is greatly reduced in vitamin A deficiency. In such cases the injection of vitamin C has had a beneficial effect on sterility

Turning to the B vitamins, it has been shown in rats [62] that thiamine and pantothenic acid influence the mobilization of riboflavin in the liver, and during the mobilization a portion of the transported riboflavin is excreted in the urine.

It has also been observed that on diets which contain insoluble sulfonamides· the pantothenic acid utilization, as reflected by increased concentration of this vitamin in the liver of pantothenic acid deficient rats, is favorably influenced by the inclusion of biotin and folic acid in the ration.[63]

Folic acid also seems to play an important role [64] in improving the absorption of vitamin A and carotene in sprue patients. This action is probably due to the influence of folic acid in favoring a normal functioning of the gastrointestinal tract.

The foregoing examples are indications only of the multiplicity of complex relationships which may exist between vitamins and between vitamins and the other nutrients. The mechanisms involved in the many relationships can be clarified only by intensive research.

In a consideration of the effect of diet on the requirement of specific nutrients one must also consider factors which influence availability of vitamins. To illustrate this type of imbalance, it has been shown for example that certain fish products which are consumed in the raw state by man contain the enzyme thiaminase, which may appreciably destroy thiamine in the gastrointestinal tract.[65] This type of action is distinguished from the earlier mentioned "toxicants" and "inhibitors" in that here a substance is present in food that destroys another substance that is required by the host although the destructive agent is not harmful to the host directly. Obviously, reason must be exercised in estimating the practical significance of such an observation, but the fact that this condition does exist is worthy of consideration.

Another of the important factors that affect the physiologic availability of a vitamin is apparent from the finding that of the thiamine present in live compressed yeast only a small portion is actually available to the host.[66]

That there are many other extrinsic factors which may favorably or adversely affect the animal's requirement for nutritive factors is clear when one considers the general differences between species and the strain variations within species. To cite such a species variation, one may point to the important difference between the rat and the chick in regard to their respective abilities to synthesize choline, the rat having a much more efficient mechanism for this synthesis than the chick. Of course the chick's requirement for the "micronutrients" in general seems to be much more critical than the rat's. This holds true also for the guinea pig. Strain variations in certain vitamin requirements are evident in at least the rat and the mouse.

The influence of the interrelationship between hormones and dietary constituents is certainly evident, and this whole field of investigation is advancing with great rapidity.

Although the factors involved in determining what kind and how much of a particular nutrient is required for every normal physiologic function through the entire life cycle of the organism are complex, it must be remembered that what has so far been learned about nutrient requirements still serves as a useful and practical tool which may be further used in elucidating some of the more complex problems.

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THE JOURNAL OF THE
AMERICAN MEDICAL ASSOCIATION

535 NORTH DEARBORN STREET - - CHICAGO 10, ILL.

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SATURDAY, OCTOBER 4, 1947

THE TREATMENT OF ARTHRITIS

In few other fields of medicine is there less exact knowledge of definition, causes or methods of treatment than in arthritis, commonly called rheumatism. Almost as many classifications are available as there are specialists. Most physicians and the public as well group the entire range of disturbances under the words "rheumatoid conditions." One writer[1] has included all these conditions under the term "rheumatic affections" with the main subheadings "rheumatic fever," "rheumatoid arthritis" (which includes many different forms), "osteoarthritis," "fibrositis" and "gout." The articles on rheumatic conditions in medical periodicals are numerous. In the absence of any scientific statistics, except for rheumatic fever, almost any form of treatment seems to produce about 20 per cent of claimed cures or arrest of cases, 30 per cent of improvement and 50 per cent of failure.

For the relief of symptoms a tremendous armamentarium of therapeutic agents is available; with these the competent therapeutist may play on his case like a composer at the keys of a piano. By the use of drugs, physical therapy, improved nutrition, orthopedic treatment, climatic and spa treatment, functional therapy, psychosomatic medicine and a number of miscellaneous measures, many symptoms may be relieved and often the disease may seem to be fully controlled.

Among the methods especially conspicuous at this time—exclusive of physical therapy, which has had some thousands of years of trial—present interest in treatment involves the well recognized use of the salicylates, gold compounds and various forms of vitamin D in high dosage. Continental authorities report cure or striking improvement in a great majority of their patients treated with gold, but American authors report a little over one half of the cases showing improvement to some degree. The figures are not impressive. The results of treatment with gold preparations, for example, can be duplicated by patients treated with a variety of other methods or simply with general therapy. Furthermore, most American specialists in the field of arthritic conditions have noted severe reactions to the use of preparations of gold, particularly in patients inclined to respond allergically to various medicaments.

The advocates of high dosage vitamin D, including Dreyer and Reed,[2] who introduced the method in 1935, have been unable to present statistical evidence much better than that credited to gold or general therapy. Few records seem to be available of cases of rheumatoid arthritis actually arrested, although well over one half of all the patients in each of the published reports on the use of vitamin D seem to have been improved. Thus Abrams and Bauer[3] stated that the "improvement noted always took place slowly. The beneficial results in all cases were short lived. During the follow-up study, the authors noted that the arthritis gradually became as severe as it had been in the pretreatment period." Some emphasis has been placed on the fact that there are varieties of vitamin D. Most of the recent investigation has involved the use of a proprietary preparation known as activated vaporized sterol ("ertron"). Some studies of small groups of cases such as those reported by Farley, Spierling and Kraines[4] and by Snyder and Squires[5] insist that the product is of definite value in the treatment of arthritis and that its use "is not associated with any more danger than is usually encountered with other accepted forms of therapy if the medication is given under the advice and control of a physician." Notwithstanding this comment, a considerable number of instances are reported in periodical literature in which hypercalcemia, vitamin D intoxication and metastatic calcification have occurred. The toxic manifestations accredited to excess dosage include nausea, anorexia, digestive upsets and nosturia. In most instances tissue calcifications have followed tremendous doses, which were usually self administered over long periods of time and without intervals of rest. There seems to be no doubt that such dosages may stimulate hypercalcemia. Nevertheless, instances of generalized calcification occurred before the use of such preparations. Perhaps combinations of conditions peculiar to the individual may be involved in such instances.

Beckman has included activated vaporized sterol with other preparations which he dismisses by saying, "I do not feel that any of the following at present merits the space that a full discussion of the methods of its employment would require." P. S. Hench[6] has stated that "the majority of experienced rheumatologists regard it ("ertron") as essentially useless."

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[1] Beckman, H.: Treatment in General Practice, Philadelphia, W. B. Saunders Company, 1945, p. 198.

[2] Dreyer, I., and Reed, C. I.: The Treatment of Arthritis with Massive Doses of Vitamin D, Arch. Phys. Therapy **16:** 537 (Sept.) 1935.

[3] Abrams, N. R., and Bauer, W.: The Treatment of Rheumatoid Arthritis with Large Doses of Vitamin D: Critical Evaluation, J. A. M. A. **111:** 1632 (Oct. 29) 1938.

[4] Farley, R. T.; Spierling, H. F., and Kraines, S. H.: A Five-Year Study of Arthritic Patients, Indust. Med. **10:** 341 (Aug.) 1941.

[5] Snyder, R. G., and Squires, W. H.: Follow-Up Study of Arthritic Patients Treated with Activated Vaporized Sterol, New York State J. Med. **41:** 2332 (Dec.) 1941.

[6] Hench, P. S.: Therapeutic "Information Please": Arthritis, J. A. M. A. **132:** 974 (Dec. 21) 1946.

Bauer and Freyberg[7] expressed their belief that the electrically activated ergosterol appears to be less toxic than vitamin D in other forms. Magnuson, McElvenny and Logan[8] noted intolerance to the medication in 26 of 180 patients treated by a combination of orthopedic and physical methods with electrically activated, heat-vaporized ergosterol for an average period of about eight months. They recorded 90 per cent of improvement with this regimen and about 8 per cent of complete failure. They did not find that the symptoms of intolerance were related to either hypercalcemia or renal damage.

In the light of the evidence here discussed, the treatment of arthritis would seem to include such well established methods as physical therapy and orthopedic treatment, prescribed as indicated by the nature of the individual case. The use of proper medication for the relief of pain is warranted. All other methods such as the use of vaccines, fever, sulfur, vitamins (including activated vaporized sterol), bee venom, histamine, penicillin and sulfonamide compounds, roentgen radiation and induced jaundice are still in an experimental and unestablished stage, and the weight of evidence points to the belief that most of them are useless.

HYALURONIDASE (THE SPREADING FACTOR) IN HYPODERMOCLYSIS

McClean[1] and Hoffman and Duran-Reynals[2] established the existence in the mammalian testicles of factors which modify the permeability of connective tissue. Later work established the wide distribution in nature of similar factors as well as their enzymic character. The most important sources of "spreading factor" known today are mammalian testes, invasive bacteria, snake venom and leech extracts. As noted in a previous editorial in THE JOURNAL, Chain and Duthie[3] regard the enzyme hyaluronidase and the spreading factor as the same substance. They showed that fairly pure preparations of testicular spreading factor also possess hyaluronidase activity. Hobby and his co-workers have shown that all preparations which contain hyaluronidase also contain the spreading factor. Hyaluronidase was shown to possess a variety of biologic activities such as bacterial invasiveness and fertilization of the mammalian ovum. Thus hyaluronidase not only produces the spreading reaction but also has the activity to decapsulate certain strains of streptococci, to remove the cumulus cells surrounding the ovum of the rabbit and to decrease the viscosity of synovial fluid.

The spreading activity of hyaluronidase, according to McClean and to Duran-Reynals, is due to the removal of a tissue barrier to fluid diffusion thought to be a hyaluronic acid gel present in the ground substance of the connective tissues. Duran-Reynals states that the spreading action is so rapid with optimal enzyme concentrations that the bleb which results following injection is completely flattened within a minute or less. The enzyme produces a qualitatively similar response in subcutaneous tissue, muscle and possibly in most tissues. Sannella[4] suggested that the enzyme might be useful in a number of clinical problems involving fluid and drug administration, among them in the facilitation of hypodermoclysis.

Hechter and his co-workers[5] employed hyaluronidase to facilitate hypodermoclysis. They found that microgram amounts of a preparation of hyaluronidase facilitate the administration and absorption of fluids administered subcutaneously in both man and the experimental animal. The effect of the spreading factor seems to be dependent on the state of the subcutaneous connective tissues. When the connective tissues are loosely organized, the enzyme increases the rate of administration about twofold. Both in guinea pigs and in 2 patients in whom the subcutaneous tissues were well developed, the rate of fluid administration was increased to a much greater extent by the subcutaneous administration of hyaluronidase prior to clysis. The authors obtained direct evidence that hyaluronidase prevents pain due to distention produced by fluid administration in studies with normal adults who were given an intradermal injection of 1 cc. saline solution with and without hyaluronidase. Without enzyme this volume of fluid introduced intracutaneously produced intense pain which persisted for ten to fifteen minutes, while the same volume administered with hyaluronidase did not produce any pain. The authors point out further that the effect of hyaluronidase in facilitating clinical hypodermoclysis is obtained with such small doses of enzyme extract that hypersensitivity to testis protein does not result. The administration to human volunteers of milligram amounts of the enzyme preparation did not produce a toxic reaction aside from a nonspecific transient foreign protein reaction. These reactions did not occur when the dosage was decreased to 200 micrograms. The enzyme hyaluronidase may also be useful for the subcutaneous administration of large amounts of plasma and drugs. In newborn infants the swellings produced by the subcutaneous injections of 30 cc. amounts of plasma with hyaluronidase disappeared within sixty minutes; without enzyme, six to twenty-four hours were required before the swellings disappeared.

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[7] Bauer, J. M., and Freyberg, R. H.: Vitamin D Intoxication with Metastatic Calcification, J. A. M. A. **130**: 1208 (April 27) 1946.

[8] Magnuson, P. B.; McElvenny, R. T., and Logan, C. E.: A Clinical Study of One Hundred and Eighty Cases of Arthritis: The Use of Steroid Complex (Whittier), Orthopedic and Other Supportive Measures in Chronic Arthritis, J. Michigan M. Soc. **46**: 1 and 71 (Jan.) 1947.

[1] McClean, D.: Influence of Testicular Extract on Dermal Permeability and Response to Vaccine Virus, J. Path. & Bact. **33**: 1045 (Oct.) 1930.

[2] Duran-Reynals, F.: Tissue Permeability and the Spreading Factors in Infection, Bact. Rev. **6**: 197 (Dec.) 1942.

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[4] Sannella, L. S.: The Effect of Testicular Extract on the Distribution and Absorption of Subcutaneous Saline Solution, Yale J. Biol. & Med. **12**: 433 (March) 1940.

[5] Hechter, O.; Dopkeen, S. K., and Yudell, M. H.: The Clinical Use of Hyaluronidase in Hypodermoclysis, J. Pediat. **30**: 645 (June) 1947.

Current Comment

THE GENERAL PRACTITIONER'S MEDAL

The announcement by the Board of Trustees of the American Medical Association of the annual bestowal of a medal on a general practitioner for exceptional service to his community has attracted the attention of the nation. Already many nominations have been made by women's clubs, Rotary clubs and other community groups. The editorial from the Providence, R. I., *Journal*, which follows, presents so charmingly the case for the general practitioner that we reprint it gladly in THE JOURNAL:

General Practitioner

News item: On Jan. 7 the American Medical Association will give a gold medal to a general practitioner selected from the country at large.

Dear Medical Ass'n.,

I been hoping you'd do something like this for over 35 years, and I'd like it to be our family doctor, who has been doctoring us ever since we thought the first baby was a tumor.

You probably never heard of him. He's not one of your big men—never invented anything in a medical way except a little spool and darning needle gadget for removing ingrowing hairs, and the only time he go. into your journal, he says, was the time he had a queer fever of his own. But I feel better the minute he comes into the house, for he doesn't come to see a lot of organs, he comes to see ME. He knows me—knows us all—inside and out, warts, scars, disposition, everything. He knows I can't eat tuna fish, that I get flighty with two degrees of fever, and overdo everything from mowing the lawn to drinking beer. And somehow he manages to add all these things up to make me feel like somebody. I don't believe I'd ever be an "interesting case" to him no matter what I got. I'd just be me. That's really something these days. I don't have to call on him often, but I'd be lost without him.

He's a grand all-round man, good story teller, good listener, good friend, a sort of father confessor with the aid of a stethoscope. It's unbelievable the good he's done in our neighborhood. A lot of people owe him money. I'd certainly like to see him get the medal.

Yours sincerely,

Almost Anybody

RECOVERY FROM HEMORRHAGIC SMALLPOX

Hemorrhagic smallpox is the most malignant form. Death may occur before the outbreak of the eruption gives a clue to the nature of the infection. Weeks and McClelland[1] report the case of a patient who recovered. A young sailor on a U. S. Naval ship which had been off the China coast for two months had been permitted to go each week to Shanghai. He felt well when the ship left for Saipan but on the second day at sea there developed a dull bilateral pain at the costovertebral angles and in the flanks which caused him to bend. At this early stage he had frequency of urination and the urine was dark and cloudy. The next day he had chills and a temperature of 104 F. and was put to bed. On the fourth day an erythematous, macular rash appeared on the inner aspect of both thighs and spread to the trunk, arms, lower legs, abdomen, chest, palms, soles and face. Large purpuric extravasations were noted over the buttocks following injections of penicillin. Hemorrhagic extravasations were present in both conjunctivas and scleras. The nose was rimmed with blood crusts, the lips swollen and crusted by hemorrhagic areas. Fresh blood was noted about the anus. Once the patient vomited blood. Some of the vesicles coalesced to form bullous lesions filled with dark hemorrhagic fluid. The patient became delirious. Here obviously was fulminating hemorrhagic smallpox with hemorrhagic pneumonia, bleeding from the intestinal tract and toxic nephritis. The patient was placed in an oxygen tent, given a transfusion of 600 cc. of ideally matched fresh citrated whole blood. Adequate intake and output were maintained by giving 5 per cent dextrose in isotonic sodium chloride solution or distilled water parenterally, to which supplements of vitamins B, C (ascorbic acid) and K were added. Since death in fulminating smallpox is frequently due to streptococcic septicemia and secondary pneumonia, the patient was given 200,000 units of the calcium salt of penicillin dissolved in 2 cc. of isotonic sodium chloride solution every two hours intramuscularly. Little improvement was noted for two days; then bleeding from the rectum and mouth decreased and the erythema began to fade, leaving the skin about the vesicles a dark reddish brown. Cultures of the vesicular fluid and Paul's test were negative. Whole blood transfusions were continued daily. On the fifth hospital day the temperature dropped to 100.2 F., the pulse rate to 90 and the respiratory rate to 24. The patient became rational, the lungs had almost entirely cleared and the bleeding generally seemed under control. On the tenth hospital day, the penicillin dosage was reduced to 100,000 units every two hours and the transfusions were discontinued. The patient became afebrile on the eighteenth hospital day. He had received in all 26,500,000 units of penicillin intramuscularly. He was discharged from the hospital on the forty-seventh day of his illness with the skin completely clear, and he was rapidly regaining the great amount of weight lost. The massive dosage of penicillin given this patient may not have changed the primary course of his disease, but it probably prevented serious secondary infection, as there was not any frank pustulation. This patient had never been successfully vaccinated against smallpox, although attempts at vaccination had been made at 6 and 12 years of age and again on entering the Navy in 1943. While the last attempt had been recorded as an "accelerated reaction," the patient was unable to recall any type of reaction in any of the three attempts at immunization, and he did not have a vaccination scar. The lack of visible response to the attempted vaccination after entering the Navy was no doubt misinterpreted. Every physician should thoroughly understand and be able to properly interpret the different types of reactions to smallpox vaccination. If when this sailor entered the Navy his vaccination had been properly followed up and repeated until a definite response was obtained he probably would not have contracted the disease that nearly took his life.

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[1] Weeks, Kenneth D., and McClelland, Warren S.: Hemorrhagic Smallpox; Report of a Case with Recovery, Naval Medical Bulletin, Vol. 47, No. 4, July-August 1947.

ORGANIZATION SECTION

Official Notes

THE INTERIM SESSION OF THE AMERICAN MEDICAL ASSOCIATION

After careful investigation of the availability of accommodations for a midwinter (supplemental) session of the American Medical Association in the short time at its disposal, the Board of Trustees selected Cleveland as the place of that session, since the accommodations for meeting places and for sleeping rooms seemed to be adequate and a convenient time seemed to be open. The midwinter session will therefore be held in Cleveland, Jan. 5 to 8, 1948, the first two days being devoted to a session of the House of Delegates and January 7 and 8 to General Scientific Meetings devoted exclusively to the general practitioner.

The Scientific Meetings, the Scientific Exhibit and the Technical Exposition will be housed in the Cleveland Auditorium, but the place of meeting for the House of Delegates has not yet been selected. The Council on Scientific Assembly, in cooperation with the Board of Trustees, will prepare the program for the Scientific Meetings.

Information concerning hotel reservations will be published as soon as arrangements concerning this matter have been completed.

On January 5 and 6, the Council on Industrial Health of the American Medical Association will hold its Eighth Annual Congress on Industrial Health at the Cleveland Auditorium.

Washington Letter

(From a Special Correspondent)

Oct. 2, 1947.

Research on Heart Disease and Hypertension

Extensive research on heart diseases and high blood pressure has been launched by the U. S. Public Health Service, and an estimated million dollars is to be spent on the project during the next year. Two principal research phases of the program are (1) studies financed by the Public Health Service in universities and hospitals and (2) research and surveys to be handled by the service itself and the states. Present work is planned to lay the groundwork for increased heart research. The program includes research on arthritis. Public health officials report that 2,000,000 Americans died of heart and blood-vessel diseases during World War II, while warfare claimed the lives of only 325,000 Americans. The heart and circulatory diseases kill five times as many persons annually in the United States as cancer does, and rheumatic diseases kill more children between 10 and 15 years of age than does any other disease.

Denies White Bread Flour Has Adverse Effect on Human Beings

Paul B. Dunbar, Food and Drug Commissioner, stated that "there is not as yet an iota of evidence of any adverse effect on human beings" from the use of nitrogen trichloride, which has been used for some twenty years to age white flour for commercial use. The Food and Drug Administration and flour manufacturers have been conducting laboratory tests on the use of the so-called "agene process" since Professor Edward Mellanby, English nutritionist, reported in the *British Medical Journal* that in dogs fed on agene-treated flour there developed canine hysteria. These tests are now reported to have shown no ill effects from the process on human subjects "or other animals" than dogs. The process is used to produce in flour physical changes formerly attained by aging.

Legion Commander Denounces American Hospital Association Proposal

James F. O'Neil, national commander, American Legion, described as "selfish and short-sighted" the proposal of the American Hospital Association that Congress freeze Veterans Administration hospital construction funds until the need for more veterans' beds is better established. Mr. O'Neil said that war-disabled veterans have already been penalized by sluggish progress of the Veterans Administration hospital construction program and added that "it is unthinkable that any group should attempt to retard the program at a time when it is getting up real steam." Mr. O'Neil said that the Legion appreciates the problems of private hospitals and is vitally interested in the maintenance of their standards.

Coming Medical Meetings

Conference of State Medical Society Secretaries and Editors, Chicago, A.M.A. Headquarters, Nov. 7-8. Dr. George F. Lull, 535 N. Dearborn St., Chicago 10, Secretary.

American Academy of Neurological Surgery, Colorado Springs, Broadmoor Hotel, Oct. 9-11. Dr. T. C. Erickson, 1300 University Ave., Madison 5, Wis., Secretary.

American Academy of Ophthalmology and Otolaryngology, Chicago, Palmer House, Oct. 12-17. Dr. W. L. Benedict, 102 Second Ave. S.W., Rochester, Minn., Secretary.

American Association of Railway Surgeons, Chicago, Nov. 23-25. Dr. Raymond B. Kepner, 547 West Jackson Boulevard, Chicago 6, Secretary.

American Clinical and Climatological Association, Colorado Springs, Oct. 13-15. Dr. James Bordley III, Johns Hopkins Hospital, Baltimore 5, Secretary.

American Otorhinologic Society for the Advancement of Plastic and Reconstructive Surgery, New York, Nov. 13. Dr. Norman N. Smith, 291 Whitney Ave., New Haven 11, Conn., Secretary.

American Public Health Association, Atlantic City, Oct. 6-10. Dr. Reginald M. Atwater, 1790 Broadway, New York 19, Executive Secretary.

American Society for the Study of Arteriosclerosis, Chicago, Hotel Knickerbocker, Nov. 2-3. Dr. O. J. Pollak, Wilmington General Hospital, Wilmington 14, Delaware, Secretary.

American Society of Clinical Pathologists, Chicago, Drake Hotel, Oct. 28-30. Dr. A. S. Giordano, 531 N. Main St., South Bend, Ind., Secretary.

Association of American Medical Colleges, Sun Valley, Idaho, Oct. 27-29. Dr. Fred C. Zapffe, 5 S. Wabash Ave., Chicago, Secretary.

Association of Military Surgeons of the United States, Boston, Nov. 13-15. Col. James M. Phalen, Army Medical Museum, Washington 25, D. C., Secretary.

Central Neuropsychiatric Association, Galveston, Texas, Oct. 17-18. Dr. William C. Menninger, 3617 W. Sixth Ave., Topeka, Kans., Secretary.

Delaware, Medical Society of, Wilmington, Oct. 13-15. Dr. John F. Hynes, Memorial Hospital, Wilmington, Secretary.

District of Columbia, Medical Society of the, Washington, Hotel Statler, Oct. 6-8. Mr. Theodore Wiprud, 1718 M Street N.W., Washington 6, Secretary.

Indiana State Medical Association, French Lick, Oct. 28-30. Mr. Ray E. Smith, 23 E. Ohio St., Indianapolis 4, Executive Secretary.

Inter-State Postgraduate Medical Association of North America, St. Louis, Public Auditorium, Oct. 14-17. Dr. Tom B. Throckmorton, 406 Sixth Ave., Des Moines, Iowa, Secretary.

Kansas City Southwest Clinical Society, Kansas City, Mo., Municipal Auditorium, Oct. 6-9. Mr. E. Leas Clower, 630 Shukert Bldg., Kansas City 6, Executive Secretary.

New England Postgraduate Assembly, Boston, Copley-Plaza Hotel, Oct. 29-31. Dr. Leroy E. Parkins, 8 Fenway, Boston 15, Chairman.

New York State Association of Public Health Laboratories, Albany, Nov. 7. Miss M. B. Kirkbride, New Scotland Ave., Albany 1, Secretary.

Oklahoma City Clinical Society, Oklahoma City, Biltmore Hotel, Oct. 27-30. Dr. Elmer R. Musick, 512 Medical Arts Bldg., Oklahoma City, Director of Clinics.

Omaha Mid-West Clinical Society, Omaha, Oct. 27-31. Dr. John M. Thomas, 1031 Medical Arts Bldg., Omaha 2, Secretary and Director of Clinics.

Southern Medical Association, Baltimore, Nov. 24-27, Mr. C. P. Loranz, Empire Bldg., Birmingham 3, Ala., Secretary.

Southern Psychiatric Association, Birmingham, Ala., Oct. 13-14. Dr. Newdigate M. Owensby, 384 Peachtree St. N.E., Atlanta, Ga., Secretary.

Southwestern Medical Association, Phoenix, Ariz., Hotel Westward Ho, Nov. 6-8. Dr. Louis W. Breck, 116 Mills St., El Paso, Texas, Secretary.

Virginia, Medical Society of, Roanoke, Oct. 13-15. Miss Agnes V. Edwards, 1200 E. Clay St., Richmond 19, Secretary.

Wisconsin, State Medical Society of, Milwaukee, Hotel Schroeder, Oct. 6-8. Mr. Charles H. Crownhart, 110 E. Main St., Madison 3, Secretary.

GOVERNMENT SERVICES

ARMY

MEETING OF MEDICAL OFFICERS IN KOREA

The second meeting of the U. S. Army medical officers on duty in Korea was held at the 34th General Hospital near Seoul, August 13, and was attended by about fifty officers in addition to those on the staff of the hospital. The commandant, Lieut. Col. John J. Marren, introduced Col. Charles F. Ward, recently assigned as surgeon of the 24th Corps, who outlined the work of the corps surgeon's office. The chairman of the meeting, Major Robert M. Hardaway, chief of surgical service, presented a paper on "Congenital Atresia of the Ileum," which was discussed by Capt. James S. Clarke, chief of surgical service in the 71st Station Hospital. Capt. Henry T. Allgood, chief of orthopedic service, 34th General Hospital, presented a paper on "Gas Gangrene," which was discussed by Capt. J. D. Beaver, chief surgical service, 382d Station Hospital. This paper was based on the case of a soldier who had an open fracture of the astragalus; and although the wound was completely debrided within two hours after injury, gas gangrene developed and necessitated a midthigh amputation to preserve life. In the forenoon ward rounds and departmental conferences were held, and many interesting cases were discussed. In the evening a buffet dinner was enjoyed at the officers' club at the hospital. The next meeting of the medical officers in Korea was scheduled for September 24 at the 71st Station Hospital, APO 235.

RESERVE CORPS TRAINING AT CINCINNATI

The president of the University of Cincinnati, Raymond Walters, announces the establishment of a new Medical Reserve Officers' Training Corps program for the College of Medicine. The training will be voluntary, will consist of one hour of lectures each week and will involve no uniforms and no drill. Students taking the advanced course (third and fourth years in the four year program) will receive $21 a month pay from the Army, and commissions as first lieutenants in the Medical Reserve Corps will be awarded on graduation from medical school and completion of the ROTC training. The unit is one of forty-three in medical schools throughout the country and part of a broadly expanded preparedness program. In charge of the unit at the University of Cincinnati will be Major C. C. Alden Jr., formerly of Buffalo, who served as battalion surgeon with the 509th Paratroop Battalion in Europe in World War II. Major Alden was called to active duty at the completion of his internship at the Buffalo General Hospital in 1940. He parachuted into North Africa and Italy, served at Anzio and in the Battle of the Bulge, was twice taken prisoner and twice escaped, was awarded the Distinguished Service Cross, Legion of Merit, Silver Star, Purple Heart and nine battle stars. He joined the Regular Army in 1946.

THE YALE ROTC UNIT

A Reserve Officers' Training Corps medical unit, designed to take advantage of special facilities in preventive medicine and public health at Yale University School of Medicine, was activated at the opening of the fall term. The Yale unit, one of forty-three similar units being set up at medical schools throughout the nation, expects eventually to enroll, voluntarily, at least half of the physically-fit male students who are United States citizens. Students enrolling in the new program will be required to take a four year elective course in military medicine, unless credit is given them for military service or previous ROTC training. Since the majority of male students now registered in medical schools are veterans, most of these signing up for ROTC medical training will not begin work in military medicine until their third year of medical school. Third and fourth year medical students enrolling in the advanced course at Yale will be given special instruction in military preventive medicine, field medicine and surgery, the medical aspects of atomic warfare and other technical subjects of a military nature.

Students registering for the advanced course will be required to sign a contract agreeing to complete two years of work in military medicine and to attend an eight week period of summer training between their third and fourth year of medical school. Advanced course students in the program will be paid at the rate of $23.70 a month while in medical school and $75 a month during the summer training period. Six weeks of this summer training will be given at the Army Medical Center, Washington, D. C., and two weeks at Fort Belvoir, Va. On the successful completion of the advanced course, medical school graduates will be offered commissions as first lieutenant, Army Medical Corps, Organized Reserve.

Major Douglas Lindsey, M.C., U. S. A., who has been named assistant professor of military science and tactics at Yale, will work in close connection with the Departments of Preventive Medicine and Public Health. Major Lindsey graduated from the Yale School of Medicine, served overseas as infantry battalion surgeon with the Second Battalion 175th Infantry, 29th Division, and holds the Silver Star, Bronze Star and Purple Heart medals. In addition, Major Lindsey is assistant resident in surgery at the New Haven Hospital.

AVIATION MEDICAL EXAMINERS GRADUATE

One hundred medical officers graduated from the course for aviation medical examiners at the School of Aviation Medicine, Randolph Field, Texas, September 12. The course covering a period of nine weeks is designed to instruct medical officers in the special duties of aviation medical examiners, to indoctrinate them in flying training, and familiarize them in the coordination of such duties with other activities which they may be called on to perform. Among those graduating September 12 were Major Humberto H. Cabrera of the Mexican Army and Major Marcial Baeza of the Army of Chile. The graduation address was made by Major Gen. Howard M. Turner, commanding general of the Tenth Air Force.

ARMY AWARDS AND COMMENDATIONS

Lieutenant Colonel William G. Dunnington

The Legion of Merit has been awarded to Lieut. Col. William G. Dunnington, M. C., U. S. Army, of Cherokee, Okla. The citation read in part as follows: For exceptionally meritorious conduct in the performance of outstanding services, as commanding officer, 184th Medical Battalion, Separate, attached to XIII Corps, from Nov. 8, 1944 to May 8, 1945. He displayed outstanding professional and executive ability, initiative and good judgment in supervising the work of his battalion, which was engaged in numerous medical tasks not ordinarily undertaken by such an organization. His excellent performance and devotion to duty reflect great credit on himself and on the armed forces of the United States. Dr. Dunnington graduated from the University of Oklahoma School of Medicine in 1934 and entered the military service in September 1940.

PHYSICIANS SEPARATED FROM SERVICE

ARMY MEDICAL CORPS OFFICERS RECOMMENDED FOR/OR RELIEVED FROM ACTIVE DUTY

Alabama

Eversole, Stanton L. Jr	Vincent
Francis, James C	Anniston
Hare, Francis W. Jr	Monroeville
Kennedy, James A	Tuskegee
McLallen, Clyde D. Jr	Birmingham
Martin, Farris J	Montgomery
Ray, James C	Sulligent
Wilson, Joseph D	Birmingham

Arkansas

Hoge, Marlin B	Ft. Smith
Hollenberg, Henry G	Little Rock
Lutes, Lester L	Blytheville
Noel, Elmer H	Ft. Smith
Stainton, Robert M	Prescott

California

Falk, Sidney M	Fresno
Fine, Irwin A	Los Angeles
Gray, Alan W	Glendale
Haris, Chester S	San Francisco
Hobson, Lewis C	Los Angeles
Holm, Donald N	Glendale
Hoover, Bryan R	Los Angeles
Hunnicutt, Cecil C	Los Angeles
McEvers, Albert E	Los Angeles
Maloney, Vance J. Jr	Armona
Neil, Emmett L	Lakewood Village
Rees, Harding	San Francisco
Rice, Harry C	Berkeley
Riley, James A. Jr	Sacramento
Roback, George S	Berkeley
Smillie, Jack G	Los Angeles
Van Nuys, Gordon P	Berkeley
Woodward, Frank A	Los Angeles
Woolley, LeGrand G	San Francisco
Wycoff, Charles C	San Francisco

Connecticut

Egan, John J	Waterbury
Hessin, Arthur L	Hartford
Moher, James J	Ansonia
Morris, Felix R	Bridgeport
Pomeroy, William H	Windsor
Windus, Charles E	New Haven

Illincis

Cullison, Charles W	Lawrenceville
Donohue, John F	Chicago
Fantel, Ernest	Dieterich
Fingerhut, Morton H	Chicago
Fishkin, Ben G	Chicago
Haffly, Gilbert N	Chicago
Hirschy, Arthur W	Cameron
Holcomb, William I	Kankakee
Levitt, Robert O	Chicago
Lustgarten, Earl M	Chicago
Mastores, Nickolas P	Chicago
Tipshus, Alfons F	Oak Park
Weidemann, John A	Chicago
Williams, Robert E	Chicago

Iowa

Fisch, Roman J	Le Mars
Hutch, John A	Cedar Rapids
Hyatt, Charles N	Humeston
McKay, Richard V. Jr	Dubuque
Reeck, Leland K	Fort Dodge

Maryland

Fetter, Bernard F. J	Baltimore
Herold, Paul G	Baltimore
McDaniel, Robert W	Baltimore
MacDonald, Charles R	Cumberland
Middleton, William D	Lanham
Pfeil, Edgar T. Jr	Baltimore
Wolf, Frederick S	Baltimore

Massachusetts

Brown, Hathorn P	Brookline
Bruno, Francis E	Quincy
Capron, Charles W. Jr	Boston
Hyde, Raymond W	Dorchester
Kelly, Harry J	Northampton
Kimmich, Robert A	Worcester
McLean, Donald E	Somerville
Parker, Arthur M	Brookline
Pauley, Harvey C	Belmont
Shushanian, Arthur A	Watertown
Slowick, Joseph E	Palmer
Sozanski, Julius C	Peabody

Michigan

Eades, Charles C	Detroit
Feldman, Milton D	Detroit
Ferrara, Louis V	Detroit
Foley, Arthur L. II	Alpena
Harkaway, Roman W	Hamtramck
Houten, Charles T	Paw Paw
Kibke, Robert S	Gaylord
Kroll, Bernard M	Detroit
McCowen, Earl A. Jr	Detroit
Mercer, Robert D	Dearborn
Root, Samuel W	Ann Arbor
Wiener, Morton J	Lansing
Williams, John P	Detroit
Williamson, Edwin M	Detroit

Minnesota

Cole, Richard L	Denton
Dahleen, Henry C	Rochester
Flynn, Louis L	So. St. Paul
Helland, Norman J	St. James
Johnson, Raymond A	Winthrop
Koskela, Albert L	Keewatin
Krezowski, Thomas K	Minneapolis
Petersen, Donald H	Minneapolis
Rider, Ernest B	Minneapolis
Shea, Andrew W	Minneapolis
Vadheim, Robert H	Tyler

Montana

Levitt, Louis	Worden
Seifert, Paul J	Bozeman

Nevada

Hood, Dwight L	Reno
McDaniel, John R. Jr	Las Vegas

New Jersey

Crunden, Allan B. Jr	Montclair
Fenimore, Edward D	Jersey City
Fifer, William T	Bayonne
Finby, Nathaniel	Newark
Fink, Stanley J	Roselle
Halstead, Frank E	Arlington
Hyde, Leroy	Brooklyn
Lang, Edwin F. Jr	Short Hills
Marucci, Horace D	Orange
Minck, Peter Jr	N. Bergen
Shapiro, Saul J	Union City
Sherman, Arthur E	Maplewood
Shill, Benjamin	Newark
Williams, Leonard D	Plainfield
Winfield, Irwin W	Highland Park

New Mexico

McBee, Alexander V	Hobbs

New York

Barge, Henry F	West Chazy
Behrer, Arnold M. Jr	Garden City
Bisaccio, Joseph R	Corona
Brinn, Harold C	New York
Burke, John C	Troy
Cantore, Anthony J	Brooklyn
Cohn, Hans J	Woodstock
Deuel, Ray E. Jr	Syracuse
Diefendorf, Herbert W	Glens Falls
Donoghue, Francis E	Brooklyn
Eller, William D	Bronx
Elson, George Y	Brooklyn
Falco, Paul R	Brooklyn
Fankhauser, Arthur	Brooklyn
Fenning, Frederick R	New York
Fitzgerald, Joseph E	Queens
Fitzgerald, William J	Albany
Flank, Maxwell D	Brooklyn
Folb, Henry	Brooklyn
Fowler, Edmund P. Jr	New York
Fowler, John D	Rochester
Fox, Leonard P	Brooklyn
Fraser, Robert W	New York
Freedman, Alfred M	Albany
Gallas, Digby	Brooklyn
Gardner, James F	Rochester
Granwell, Leslie J	New York
Hicks, Andrew R	Mount Vernon
Hyman, Richard M	New York
Klein, Harold	Brooklyn
Lane, Theron I	Yorktown Heights
Margles, Elliott C	Brooklyn
Masur, Charles J	New York
Segenreich, Albert	New York
Shapiro, Richard D	Ozone Park
Szymczyk, Casimir J	Amsterdam
Taglianetti, Edmund V	Brooklyn
Weingeist, Samson	Long Island
Wessler, Gerald	Bronx

Ohio

Chaboudy, Louis R	Portsmouth
De Vaux, William D	Cincinnati
Dix, George C	Cleveland
Ellis, Samuel C	Xenia
Epstein, Isadore S	Cleveland
Feldman, Raymond	Cleveland
Felts, Edwin J	Cleveland
Fisher, Jerome	Columbus
Fishman, Melvin B	Cincinnati
Freeman, Edson A. Jr	Akron
Fulton, Richard L	Dayton
Harco, Clarence E	Conneaut
Herzberg, Mortimer Jr	Cincinnati
Leiter, Eugene R. K	Cleveland
Link, Francis C	Springfield
Lohrey, Ralph C	Cleveland
Longaker, Paul E	Conneaut
McClellan, Harvey B	Cleveland
McConnor, Richard J	Cleveland
Masaryk, Joseph A	Burghill
Master, John R	Cleveland
Moberly, John W	Hillsboro
Motto, Rocco L	East Cleveland
Roska, Charles J	Canton
Rothring, Howard E	Cincinnati
Sanders, Howard E	Springfield
Sigler, John W	Chillicothe
Smead, Robert L	Toledo
Smedal, Erling A	Mansfield
Smith, Philip W	Marion
Wichowski, Walter A	Toledo
Widzer, Ben	Cleveland
Williard, Nicholas E	Tiffin
Wolf, Robert E	Tuscarawas

Texas

Hart, Walter F	Tyler
Keates, Albert E. Jr	Beaumont
Kirby, Thomas J. Jr	New Willard
Kirkpatrick, Robert H	San Antonio
Schultz, Leon	Galveston
Shaw, Guy G. Jr	Kaufman
Shelby, David M	San Diego
Watkins, Walter C,	Amarillo
Windrow, Nuel C. Jr	Houston
Wolf, William M. Jr	San Antonio

Washington

Curtis, Clyde A	Seattle
Douglass, Charles W	Wenatchee
Mitchell, Thomas J	Spokane
Mosiman, Roscoe S	Seattle
Smeall, Thomas A	Tacoma
Williams, William E	Auburn

NAVY

JOINT ARMY-NAVY MEDICAL SUPPLY CATALOGUE

The new joint Army-Navy medical supply catalogue which was begun in 1945 has finally been issued. Every medical and hospital facility of the Army and Navy will receive a copy when distribution is complete. This large volume has been hailed by the Secretary of Defense and the two Surgeon Generals as an invaluable instrument of increased efficiency and economy and an important milestone in the logistics of military medicine. The nearly 8,000 items listed range from such inexpensive expendable articles as tongue depressors to large pieces of equipment which costs thousands of dollars. The items in the book are divided into fourteen classes, among which are 5,026 JAN items which are adaptable for both Army and Navy use; the remainder of the listings are on "limited service" supply, which means that their use is being discontinued. The catalogue is so fully indexed that an article can be located by its name or number in a few moments. In recognition of the simplified thoroughness of the new catalogue the Veterans Administration and the U. S. Public Health Service have indicated that they will adopt a similar style. The task of composing this thick volume was launched under former Surgeons General Norman T. Kirk, U. S. Army, and Vice Admiral Ross T. McIntire (MC), U. S. N. (retired). The ultimate result may be a single federal medical supply catalogue providing special designation for items used by only one service, comparable to the Army-only and Navy-only designation in the present volume.

SAFETY AWARDS

The Secretary of the Navy Award for Safety has been awarded by former Secretary of the Navy James Forrestal to the U. S. Naval Hospital and the Naval Medical Supply Depot, Oakland, Calif., for a reduction in the accident rate of 54 per cent for the hospital and 39 per cent for the depot. Notice of this award to the U. S. Naval Hospital, Annapolis, Md., appeared in The Journal, September 13, page 103.

NAVY AWARDS AND COMMENDATIONS

Commander John L. Tullis

The Navy Commendation Ribbon has been awarded to Comdr. John L. Tullis (MC), U.S.N. The citation read as follows: For meritorious service in connection with the Naval Medical Research Section of Operation Crossroads. He competently and efficiently carried out the pathologic work of the section to obtain information of the utmost value in assaying the effects of atomic bomb radiations on animals. His industry and skill have set a splendid example for those working under him. As division officer he performed his duties in a highly capable manner, and as pathologist he demonstrated an unusual degree of ability, which contributed to the successful conduct of the Atomic Bomb Tests. Dr. Tullis graduated from Columbia University College of Physicians and Surgeons, New York, in 1938 and entered the Regular Navy Medical Corps in 1943.

VETERANS ADMINISTRATION

ESTIMATE OF NUMBER OF VETERANS ALIVE IN THE YEAR 2000

The Veterans Administration has made a projection to estimate what its administrative and operating requirements will be in the future. The projection begins with the potential World War II population of 16,051,000 as of July 25, 1947. This number includes those released by the armed forces who are still living and those yet to be released as veterans of World War II. The average age of this group on that date was 28.6 years. The Veterans Administration computes that 3,400,000 World War II veterans will be alive in the year 2000. The projection ends with the year 2030, when it is expected that less than a thousand World War II veterans will be alive, at an average age of 104 years. The peak of medical care for World War II veterans is expected to be in 1975 when it is expected that 12,700,000 will be living at the average age of 57 years.

The number of World War I veterans still living as of June 30, 1947 was 3,727,000, and their average age then was 57 years.

HOSPITAL NEWS

Eleven hundred additional temporary beds will be provided in Downey Hospital near North Chicago, Ill., through remodeling of buildings and facilities built during the expansion of the Great Lakes Naval Training Station in 1943 on ground adjoining the Veterans Administration facility. Six hundred of these beds will be for tuberculosis cases and 300 for neuropsychiatric cases. It is estimated that four months will be required to remodel the buildings and obtain the necessary additions to the hospital staff.

CONTRACT FOR HOSPITAL IN BROOKLYN

The War Department announces that the Corps of Engineers has awarded the contract for the construction of the main building of the 1,000 bed hospital at Fort Hamilton, Brooklyn, for $14,700,000, which is $2,000,000 less than the original low bid. The saving was brought about by deleting the auditorium and making various other changes in the plans.

PRIVATE HOSPITAL CARE

According to the *New York World Telegram,* August 26, private hospital care for New York veterans with service connected disabilities will be discontinued except in cases of emergencies. Many veterans now being treated in private hospitals for tuberculosis and neuropsychiatric disorders will be transferred to federal hospitals, depending on the availability of beds and in a manner consistent with sound medical judgment. This move is being made in the interest of economy.

PERSONAL

Dr. Henry I. Berman, Pikeville, Ky., has accepted a position in the urology department of the Veterans Administration Hospital at Dayton, Ohio.

Dr. Francis J. Phillips has been assigned as chief, thoracic surgery, at the Veterans Hospital, Temple, Texas, instead of surgical chief. Dr. Bromley S. Freeman is chief of the surgical service at this hospital.

Dr. Paul C. Clark has joined the neuropsychiatric division of the staff of the veteran's hospital at St. Petersburg, Fla. Dr. Clark was for several years on the staff of the Columbus (Ohio) State Hospital and clinical director and assistant superintendent at the Huntington State Hospital in West Virginia.

Dr. Mark W. Garry, a graduate of Marquette University School of Medicine, Milwaukee, has accepted the position of chief of medical services for the Veterans Administration Hospital at Wood, Wis.

Dr. Louis G. Welt, clinical instructor of medicine at Yale University School of Medicine, New Haven, and practitioner of medicine in Connecticut since 1939, has been appointed to a medical research post with the Veterans Administration in Washington, D. C.

Dr. George A. Leonard, formerly of Waterbury, Conn., has been appointed chief medical officer of the VA regional office in New Orleans.

Ruth Addams, New York, has been appointed to the Veterans Administration central office nursing staff as a specialist in community nursing to work with the Red Cross, and other local groups, in seeing that adequate nursing care is available for disabled veterans in their communities and homes after their discharge from Veterans Administration hospitals.

Dr. Oscar Auerbach, chief, laboratory services, Halloran Veterans Administration Hospital, New York, recently returned from a month's tour of duty with the Mexican Society for the Study of Tuberculosis. Dr. Auerbach conducted a four weeks' course during August in pathology in chest diseases at the invitation of the president of the society.

PUBLIC HEALTH SERVICE

RESEARCH FELLOWSHIPS AVAILABLE

The Surgeon General, U. S. Public Health Service, has been given authority to establish and maintain research fellowships which are intended to promote training and development of investigators in the field of medicine and related sciences. The following types of research fellowships are to be awarded:

1. A predoctorate fellowship is available to qualified applicants who have a Bachelor's Degree. The stipend for successful applicants without dependents is $1,200 and for those with dependents $1,600 per annum. The tuition fee is paid by the Public Health Service. These fellowships are also granted to medical students who have finished one or two years of their medical course and contemplate a career of research and who wish to spend two or three additional years in a basic science before completing their studies toward their M.D. degree.

2. A predoctorate fellowship is available to qualified applicants holding a Master's Degree or its equivalent and carries a stipend, in addition to tuition, of $1,600 or $2,000 for persons without or with dependents, respectively.

3. A postdoctorate fellowship is available to qualified persons holding a Doctor's Degree in medicine or related fields. It carries a stipend of $3,600 for those with and $3,000 for those without dependents; it does not provide tuition fees. An increase of $300 each year is granted to those who are reappointed.

4. Special research fellowships are awarded to applicants who are qualified for a postdoctorate fellowship and who in addition have demonstrated outstanding ability or have special training for a specific problem. The stipened is determined in each individual case.

These fellowships permit vacations in accordance with the rules of the institution where the work is being done but not to exceed one month during the term of the fellowship. Progress reports are required at the end of eight months for fellows who contemplate reappointment and at the end of the fellowship from all others. Fellows are permitted to carry on not more than one hour of teaching or lecture or three hours of laboratory instruction per week during one semester only. Although fellowships are awarded about every three months, the date of beginning work can be set at any time to suit the convenience of the applicant or institution.

Forms for application for a research fellowship may be obtained from the Division of Research Grants and Fellowships, National Institute of Health, Bethesda 14, Md. The application must be supported by transcripts of scholastic records and by letters of recommendations from persons named by the applicant in the completed form. A list of all research projects which the U. S. Public Health Service supported from Jan. 1, 1946 to Aug. 31, 1947 shows a total of $10,214,174 made available to investigators. The largest number of projects (114) were in the field of cancer, the second largest (52) in physiology and the third (49) in biochemistry and nutrition. The Public Health Service also released the names of all the investigators, their projects, the institutions and the amount of money granted in each case.

NEW MEMBERS OF MENTAL HEALTH COUNCIL

The U. S. Public Health Service announces the appointment of two new members of the National Advisory Mental Health Council: Dr. Alan Gregg, Rockefeller Foundation, New York, and Dr. Karl M. Bowman, San Francisco, to succeed Dr. Frank F. Tallman of Columbus, Ohio, and Dr. George S. Stevenson, Redbank, N. J., who on the expiration of their terms on the Council were appointed consultants in mental health to the Public Health Service.

The following have been appointed to the headquarters staff of the mental hygiene division of the Public Health Service: Dr. Raymond V. Bowers, formerly with Selective Service as chief of research; John C. Eberhard, formerly on the staff of the psychology division of Northwestern University, Chicago; Miss Esther A. Garrison, a nurse officer in the Public Health Service, and Miss Pearl Shalit, formerly with the Family Nursing Service, St. Paul.

MISCELLANEOUS

THE ISOTOPE DISTRIBUTION PROGRAM

The U. S. Atomic Energy Commission, Isotope Branch, reports in *Science* that during the first year of distribution, ending July 31, 1947, pile-produced radioisotopes were shipped to more than one hundred and sixty institutions and organizations located in thirty-one states and in the territory of Hawaii. At the head of the list of recipients are medical institutions and hospitals, followed by educational institutions for use in research; industrial and private organizations for use in research; then public and private nonprofit institutions other than educational. About sixty different radioisotopes were shipped—a major portion of available kinds.

Hundreds of different uses are being made of distributed radioisotopes, but outweighing the others in number and importance at present are the tracer investigations (including medical diagnosis) and medical therapy. Investigations have been carried on in the fields of agriculture, plant physiology, industrial research, chemistry, bacteriology and metallurgy. In chemistry the principal emphasis has been on the use of labeled molecules in the study of reaction and exchange mechanisms. Physicists have used radioisotopes in their effort to arrive at more accurate measurements of disintegration patterns.

Great improvement was made during the year in the routine production of many items at the Clinton Laboratories, Oak Ridge, Tenn. Production of the majority of items is now adequate to meet the legitimate demands of all users who can handle the material effectively and safely.

Research workers may now secure service irradiations of their own materials (suitable for exposure in the Clinton pile). The Argonne National Laboratory, Chicago, has also recently undertaken to perform certain service irradiations for qualified investigators by means of the Argonne heavy-water pile. Improved methods of producing radioactive carbon (C^{14}) have permitted a reduction in the cost of this extremely important isotope from $367 to $50 per millicurie.

Information on health protection, the commission reports, is one of the most frequent requests received in connection with this program, and several circulars on health protection are available. Details concerning the availability and procurement of isotopes and related information may be obtained by writing the Atomic Energy Commission, P. O. box E, Oak Ridge, Tenn.

Medical News

(Physicians will confer a favor by sending for this department items of news of general interest: such as relate to society activities, new hospitals, education and public health. Programs should be received at least two weeks before the date of meeting.)

CALIFORNIA

Graduate Assembly at San Diego.—The staff of the San Diego County General Hospital has arranged a graduate assembly for October 6-8, to which all physicians are invited. No charge will be made for attendance. Physicians who will lead the discussion include:

Thomas J. Dry, Rochester, Minn.
Rubin Flocks, professor of genitourinary surgery, State University of Iowa College of Medicine, Iowa City.
Frank R. Lock, professor of obstetrics and gynecology, Bowman-Gray Medical School, Winston-Salem, N. C.
Edward B. Shaw, associate clinical professor of pediatrics, University of California Medical School, Berkeley-San Francisco.
John B. De C. M Saunders, professor of anatomy, University of California Medical School.
Le Roy C. Abbott, professor of orthopedic surgery, University of California Medical School.
John R. Paxton, assistant clinical professor of surgery, University of Southern California School of Medicine, Los Angeles.

Morning sessions will be held in the San Diego County General Hospital and afternoon sessions at the U. S. Naval Hospital.

Eye Laboratory Established in Los Angeles.—The Estelle Doheny Eye Foundation announces the establishment of an Eye Laboratory at St. Vincent's Hospital, Los Angeles. The immediate functions of the laboratory are (1) to serve for the diagnosis and registration of pathologic specimens, with preparation of gross specimens and microscopic slides for ophthalmologists submitting specimens, and for building up a museum of Eye Pathology; (2) to serve as a bacteriologic laboratory wherein diagnostic scrapings, smears and cultures can be studied, animal inoculations made, and the sensitivity of organisms to various drugs and antibiotics determined; (3) to provide facilities for fundus, gross and slit lamp photography and to maintain a library of photographs and motion pictures for teaching ophthalmology; (4) to provide an "Eye Bank" for Southern California, with registry of potential donors and recipients, and (5) to distribute and loan certain drugs and equipment for radiation therapy of the eye for use outside the laboratory. Dr. A. Ray Irvine, professor of ophthalmology, University of Southern California School of Medicine, Los Angeles, will act as chairman of the original board. On the advisory board will be Drs. Alan C. Woods, professor and director of the department of ophthalmology at Johns Hopkins Medical School, Baltimore; Cecil S. O'Brien, head of the department of ophthalmology at Iowa Medical School, and Phillips Thygeson, former professor of ophthalmology at Columbia University College of Physicians and Surgeons, New York, and now associate professor at the University of California Medical School, Berkeley-San Francisco. It is contemplated that the advisory board will also include business and professional leaders as well as representatives from the eye departments of Los Angeles hospitals, medical schools and the eye section of the Los Angeles County Medical Society. Dr. Peter Soudakoff, Los Angeles, formerly associate professor of ophthalmology at the Peking Union Medical College, Peiping, China, will serve as full time pathologist at the laboratory. It is anticipated that research associates, granted fellowships in basic ophthalmic research by the foundation, will be added to the laboratory staff from time to time. In creating this charitable foundation, dedicated to the conservation and restoration of sight, Mrs. Edward Laurence Doheny has been careful to insure a flexibility of organization to take care of immediate practical needs and to provide for the development of research in ophthalmology.

DISTRICT OF COLUMBIA

Orientation Program.—George Washington University School of Medicine inaugurated a two week orientation program for members of the 1947 freshman class beginning September 15. The program was designed to acquaint students with medical terminology and to show them the relationship of medicine with physics, biology, sociology and chemistry. Lectures were also given on the evaluation of scientific evidence and basic sciences in medicine. Discussions followed each address.

Personals.—George Washington University has appointed Dr. Luther Sheldon Jr., rear admiral, U. S. N., retired, as associate university physician, thereby opening campus medical facilities for students daily from 9 a. m. to 5 p. m. Dr. Elizabeth S. Kahler, who has been associate university physician for several years, will also be on duty.——Dr. William W. Stanbro has been appointed chief roentgenologist at George Washington University Hospital and assistant professor of radiology at the University School of Medicine. Dr. Stanbro has just completed residence on a fellowship at the Mallinckrodt Institute of Radiology, Washington University School of Medicine, St. Louis, Mo., where he also received his degree in medicine.

ILLINOIS

Personal.—Dr. James H. Davis, Carlinville, has received a fifty year certificate from the Macoupin County Medical Society. Dr. Davis, a graduate of Northwestern University Medical School, Chicago, 1897, has spent most of his fifty years in practice in Carlinville.

Joint Meeting of Tuberculosis Societies.—A joint meeting of the Illinois chapters of the American Trudeau Society and the American College of Chest Physicians was held at the Abraham Lincoln Hotel, Springfield, October 2 at 2 p.m. Dr. Charles K. Petter, Waukegan, spoke on "The Need for Periodic X-Ray Examination of Adult Chests"; Dr. Darrell H. Trumpe, Springfield, "Role of Bronchoscopy in Diseases of the Chest"; Dr. George H. Vernon, Springfield, "Our Experience with Streptomycin and Summary of Present Status," and Dr. Jesse A. Stocker, Springfield, "Limitations of Collapse Procedures." At the regular meeting of the Sangamon County Medical Society that evening Dr. J. Arthur Myers, University of Minnesota Medical School, Minneapolis, spoke on "Tuberculosis in General Practice and the Specialties."

Lectures Arranged by the State Society.—The Scientific Service Committee of the Illinois State Medical Society has scheduled the following lectures:

October 9—Six County Medical Society in Anna State Hospital, Anna, Dr. Louis R. Limarzi, Chicago, "Common Blood Disorders in General Practice," and Dr. Frederic A. Gibbs, Chicago, "Epilepsy." Will-Grundy County Medical Society, Joliet, Dr. Leon O. Jacobson, Chicago, "Radioactive Therapy."

October 16—Logan County Medical Society, Lincoln, Dr. E. Harold Ennis, Springfield, "Rh Factor."

November 20—Logan County Medical Society, Dr. F. Garm Norbury, Jacksonville, "Psychosomatic Medicine."

The following Chicago physicians are lecturing to Parent-Teacher Associations under the auspices of the Educational Committee of the Illinois State Medical Society:

October 9—Dr. Paul Starcevich, "Various Aspects of Nutrition," at the Matteson Public School, Matteson.

October 10—Dr. Morris Braude, "Mental Hygiene," at the Gross School, Brookfield.

Chicago

Society News.—The Chicago Society of Allergy at its annual meeting elected Drs. Theodore B. Bernstein president, Edward G. Tatge president-elect and Morris A. Kaplan secretary-treasurer.——At its latest meeting the Chicago Orthopaedic Society elected Drs. Harold A. Sofield president, John R. Norcross president-elect and Manley A. Page secretary-treasurer.

Assistant Medical Director of University Hospitals.—Dr. Myron C. Benford, Chicago, head of the outpatient department of the University of Illinois hospitals since 1942, has been promoted to assistant medical director, to assist Dr. John B. Youmans, dean of the college of medicine and medical director of the hospitals. Dr. Benford is a 1935 graduate of the university's College of Medicine and was appointed to the faculty in 1937. He later served as assistant superintendent of the hospitals.

Dr. Bailey Promoted to Distinguished Professor.—Dr. Percival Bailey, who has been on the faculty of the University of Illinois since 1929, has been promoted to the rank of distinguished professor of neurology and neurologic surgery. Dr. Bailey received his M.D. degree from Northwestern University, 1918. He has conducted research in neurology, neurophysiology, pathology and surgery. During the last five years he has conducted research on the organization of superficial layers of the brain. He has also been a member of the faculty at Harvard Medical School, Boston, Northwestern Medical School, and the University of Chicago School of Medicine.

Share Fellowship in Cancer Research.—A grant of $2,000 for a fellowship in cancer research in the field of pathology has been made to the Northwestern University Medical School by the Illinois Federation of Women's Clubs. The fellowship will be shared by Drs. Joseph T. Chung and Thomas J. Madden, research men working under the direction of Dr. William B. Wartman, Morrison professor of pathology and chairman of the department. Dr. Chung's research is centered in the application of a cell-staining method for the early diagnosis of cancer. Dr. Madden, working in the field of biochemistry, is studying enzymes and their relation to malignant neoplasms.

INDIANA

College Honors Dr. Stanley.—Physicians and other scientists gathered at Earlham College, Richmond, September 19, as a part of the school centennial celebration, to honor Wendel M. Stanley, Ph.D., Princeton, N. J., of the Rockefeller Institute of Medical Research. Dr. Stanley gave an address in Carpenter Hall on studies on purified influenza virus. He is a graduate of Earlham College and a winner of the Nobel prize for "achievement in preparing enzymes and virus proteins in pure form."

State Society to Award Scholarships to Nurses.—The council of the Indiana State Medical Association in July took action to give scholarships of $200 each to six girls for training in any one of the twenty-eight accredited nursing schools of the state. It also decided to award medals in the name of the association to the three students with the highest grades in each graduating class of the Indiana University School of Medicine, Bloomington-Indianapolis. Six $500 medical school scholarships were awarded last January.

LOUISIANA

Society News.—At the annual meeting of the New Orleans Gynecological and Obstetrical Society July 1 the following officers were elected: Dr. Earl C. Smith, president; Dr. Woodward D. Beacham, president-elect; Dr. John S. Herring, secretary, and Dr. Harry Meyer, treasurer.

Academy of General Practice.—At the organization meeting of the American Academy of General Practice of New Orleans, held August 20, Drs. Joseph C. Menendez was elected president, Esmond A. Fatter, vice president, and Robert E. Gillaspie, secretary-treasurer. Dr. Jason P. Sanders, Shreveport, president of the American Academy of General Practice of Louisiana and a representative on the board of directors of the national organization, addressed the group.

Louisiana Faculty Appointments.—The Louisiana State University School of Medicine, New Orleans, has announced the following appointments: Drs. Harry E. Dascomb, instructor in medicine; Robert M. Waters, instructor in surgery; John J. Blasko, clinical instructor in neuropsychiatry; Louis Raider, New York, clinical instructor in radiology, Simon V. Ward Jr., clinical instructor in obstetrics and gynecology; Harold S. Gamble, assistant in anatomy; John D. Krafchuk, assistant in microbiology; James T. McQuitty, clinical assistant in surgery, and Robert D. Bone, clinical assistant in medicine.

MAINE

Elected to National Board.—Dr. Adam P. Leighton, Portland, was unanimously elected to the National Board of Medical Examiners recently at its meeting. He succeeds the late Dr. James D. Osborn, Frederick, Okla., who died February 7, and whose term would have expired in 1949.

MARYLAND

Semiannual Meeting of State Association.—The Medical and Chirurgical Faculty of Maryland will hold its semiannual meeting at the auditorium, County Office Building, Easton, October 9 at 10:30 a.m. At the general meeting beginning at 2:30 p.m. Dr. George W. Thorn, Hersey professor of the theory and practice of physics, Harvard University Medical School, Boston, will speak on "Treatment of Renal Insufficiency."

NEBRASKA

University Appointments.—Dr. Pliney Allen has been appointed assistant professor of pathology at the University of Nebraska College of Medicine, Omaha, and has accepted the position of pathologist at the Immanuel Deaconess Institute in Omaha. A graduate of Harvard Medical School, Boston, he has taken training at the Mayo Foundation and has been associated with Charity Hospital of Louisiana and the Louisiana State University School of Medicine, New Orleans, and the Joseph H. Pratt Diagnostic Hospital in Boston. Robert M. Allen, Ph.D., has been appointed assistant professor of bacteriology.——Dr. James P. Tollman has been appointed chairman of the department of clinical pathology and bacteriology at the University of Nebraska College of Medicine, Omaha. He has been associated with the institution almost continuously since his graduation in medicine there in 1929. Dr. John R. Schenken, associate professor of pathology, has been appointed professor of pathology and acting chairman of the department of gross and micros pathology. He is a graduate of the State University of Iowa College of Medicine, Iowa City, 1928, and was professor and head of the department of pathology and bacteriology at Louisiana State University School of Medicine, New Orleans, 1939-1945, when he came to the University of Nebraska College of Medicine.

NEW YORK

Mental Deficiency Section Meeting.—The northeastern section of the American Association on Mental Deficiency is holding a meeting at the Wassaic State School, Wassaic, N. Y., October 18. During the morning hours the school will be open for inspection. After luncheon the following papers will be given and discussed: Drs. Ernest S. Steblen and Joseph E. Rosenfeld, "An Analysis of the Relationship of the Moron Group to State School Training"; Patrona F. Morgan, "Social Service in the Realm of Mental Deficiency," and Percy H. Larrabee, O.T.R., "Occupational Therapy with Mental Defectives."

Conference on Radioisotopes.—Brookhaven National Laboratory, Upton, will hold a conference on the use of radioisotopes in medical and biologic research, October 16-18. Topics include: "Legal Aspects in Use of Radioactive Materials," "Protective Measures for Personnel," "Protective Measures for Public Health," "Procedures Used in Examination of Individuals Exposed to Radioactive Materials," "Procurement of Isotopes," "Shipping of Isotopes," "Handling of Radioactive Materials" and "Disposal of Radioactive Waste Materials." Those interested in attending should communicate with Miss Ellen Matteson, Secretary, Conference Committee, Brookhaven National Laboratory, Upton.

Lectures for County Societies.—The Medical Society of the State of New York in cooperation with the New York State Department of Health has arranged a program for the Schenectady County Medical Society for October 7 at 8:30 p.m. in the library at Ellis Hospital, Schenectady. Dr. John R. Cobb, assistant orthopedic surgeon, Hospital for Special Surgery, New York, and Thomas I. Hoen, professor of neurosurgery, New York Medical College Flower and Fifth Avenue Hospitals, New York, will take part in a symposium on low back pain. The Seneca County Medical Society is to hear Dr. Richard S. Farr, professor of orthopedic surgery, Syracuse University College of Medicine, Syracuse, speak on "The Treatment of Fractures by the General Practitioner" on October 16 at 2 p.m. at the Willard State Hospital, Willard.

New York City

Long Island College to Confer Doctor of Medical Science.—The Long Island College of Medicine, Brooklyn, has been authorized to confer the degree of Doctor of Medical Science by the state board of regents, following the expansion of teaching activities to include graduate training in psychiatry. Graduate courses in other fields will be organized as the necessary space and instructors become available. The college has heretofore sponsored only a part-time program of graduate training. The three year graduate teaching program is under the direction of Dr. Howard W. Potter, professor of psychiatry.

Dedicate Building for School of Nutrition.—The new home of the school of nutrition at Cornell University will be dedicated October 10. Speakers representing the government, health and science groups, the farmer and the university, will discuss "Nutrition—A Key to Human Welfare." Among the speakers will be Governor Thomas E. Dewey; Congressman Clifford R. Hope of Kansas, chairman, congressional agriculture committee; Dr. William H. Sebrell Jr., U. S. Public Health Service, Bethesda, Md.; Frank M. Smith, Springfield Center, N. Y., chairman, New York State Conference Board of Farm Organizations; Dr. Leonard A. Maynard, director of the School of Nutrition, and Neal D. Becker, New York, chairman of the Cornell University Board of Trustees. The new building will provide much larger facilities for teaching and research for the school of nutrition, which was established in 1941. The building is named in honor of Professor Elmer S. Savage, a member of the faculty for thirty-five years until his death in 1943.

VIRGINIA

The Hundredth Annual Meeting of State Society.—The Medical Society of Virginia will hold its hundredth annual meeting October 13-15 at Roanoke, under the presidency of Dr. William L. Powell. Besides numerous members who will speak on the scientific program, the guest speakers include:

Richard H. Shryock, Ph.D., Philadelphia, Progress of Medicine in America in the Past One Hundred Years.
W. Halsey Barker, Baltimore, Gastro-Intestinal Symptoms Occurring in Disorders Located Outside of the Gastro-Intestinal Tract.
Frederick A. Coller, Ann Arbor, Mich., Peripheral Diseases and the Newer Concepts of Their Management.
Frank E. Smith Jr., New York, The Doctor Assumes a Moral Responsibility.

Entertainment includes a birthday party of the one hundredth meeting Monday evening and a banquet Tuesday at 7:15 p.m. followed by a dance. The Alumni Association will have a dinner meeting Monday at 6 p.m., and the breakfast of the American Academy of General Practice, Virginia Section will be Tuesday morning at 8 o'clock. Special society luncheons are scheduled for Tuesday at 1:15 p.m. The Woman's Auxiliary will meet October 14-15.

WEST VIRGINIA

The Loss of Containers for Laboratory Specimens.—A regulation adopted at a recent meeting of the public health council prohibits the use of containers provided by the West Virginia state hygienic laboratory for purposes other than sending specimens for examination and diagnosis of diseases to that laboratory. The regulation is effective October 1. The annual loss of containers has long been a serious problem, and drastic steps had to be taken lest the laboratory be compelled to discontinue furnishing this service. The loss to the laboratory last year amounted to about $12,000 because of the failure to return containers, which are mailed without charge to physicians, hospitals and public health agencies throughout the state.

Health Departments Merge.—The merger of the Kanawha County health department with the health department of the city of Charleston was completed July 1. The consolidation was effected under the provisions of a bill passed by the legislature at the regular session early in 1947. Merger of the city and county health units has long been advocated by the West Virginia State Medical Association. The new department will be under the supervision of a board of health. Appropriation for the expenses of the new unit for the fiscal year ending June 30, 1948, amounts to $64,000, the city and county each having appropriated one half that amount. Present facilities in the city hall and court house will be used until new quarters can be provided.

GENERAL

Foundation Changes Name.—The name of the National Research Foundation for Eugenic Alleviation of Sterility, Inc. has been amended in accordance with the law and has been changed to National Research Foundation for Fertility, Inc., according to the executive secretary, Dr. Alfred Koerner, New York.

Dr. Harper Given Pediatric Award.—Dr. Paul S. Harper, Fairfield, Conn., received the Mead Johnson pediatric award at the annual meeting of the Academy of Pediatrics in Pittsburgh in May. The award was presented for work on "malaria and other insect borne diseases in the South Pacific" carried on while in the military service.

American Institute of Physics.—Mr. Cleveland Norcross, Washington, D. C., at present executive secretary of the Office of Scientific Research and Development, has been appointed assistant director of the American Institute of Physics, which is a federation of the American Physical Society, the Optical Society of America, the Acoustical Society of America, the American Association of Physics Teachers and the Society of Rheology.

American Board of Obstetrics and Gynecology.—The next written examination (Part I) for all candidates will be held in various cities of the United States and Canada on Friday, Feb. 6, 1948 at 2 p.m. Candidates who successfully complete the Part I examination proceed automatically to the Part II examination held later in the year. A number of changes in regulations and requirements were put into effect at the last annual meeting of the Board in Pittsburgh, June 1-7 (The Journal, July 5, page 910). Applications are now being received for the 1948 examinations. The closing date is Nov. 1, 1947. For application blanks address Paul Titus, M.D., Secretary, 1015 Highland Building, Pittsburgh 6, Pa.

Study Atomic Bomb Survivors.—The Atomic Energy Commission together with the National Research Council will undertake a long range study of the survivors of the atomic bomb attacks on Hiroshima and Nagasaki, to be financed by the commission and directed by the council's committee on atomic casualties, organized recently as a result of a directive issued by President Truman. Dr. Thomas M. Rivers, Rockefeller Institute for Medical Research, was appointed chairman of the committee, whose members include a number of the country's leading authorities on the effects of radiation. The investigations will attempt to determine the effect of atomic radiation on the blood cells, on the physical growth of children, on the mechanisms of heredity and on the development of various pathologic conditions including the formation of massive scar tissue. The commission said that the program will be carried out in Japan under American physicians with Japanese doctors and scientists also taking part. The study of genetics and heredity may continue over a period of years.

Nurse Receives Medal for Merit.—At a press conference in the Social Security Building, Washington, D. C., September 17, the Surgeon General, U. S. Public Health Service, presented the medal for merit to Mrs. Elmira Bears, Bronxville, N. Y., executive secretary, national nursing council for war service, 1941-1947, in recognition of her contribution in the war effort of the United States. She is the third woman in the history of the nation to be so honored. She has served as nurse adviser of the United States delegation to the World Health Conference, led in the development by the National Nursing Council of a pattern for evaluation and filling nursing needs, was active in establishing the Cadet Nurse Corps in the U. S. Public Health Service and has led in developing a unified program for meeting America's postwar nursing service needs.

The Lasker Awards for 1947.—Dr. Thomas Parran, Surgeon General, U. S. Public Health Service, will receive a special Lasker award of $2,500 and a gold replica of the classical Winged Victory of Samothrace, symbolizing victory over disease and death. He is being cited for his approach to the control of venereal disease which has brought about a decreasing death rate. Individual Lasker Awards for scientific research, to include $1,000 and a gold statuette, will be presented to Dr. Oswald T. Avery, New York, Rockefeller Institute for Medical Research, for studies on the antigenic constitution of bacteria, particularly the pneumococcus; Dr. Thomas Francis Jr., University of Michigan School of Public Health, Ann Arbor, for his contribution to the knowledge of influenza; Dr. Homer W. Smith, associate professor of surgery, New York University College of Medicine, New York, for studies in cardiovascular and renal physiology, and Dr. Alice Hamilton, Hadlyme, Conn., for her administrative achievement in the prevention of occupational diseases. The two group winners, each to receive a silver replica of the statuette, are the British Ministries of Food and Health for its war-induced program of food distribution in Great Britain, resulting in the improved public health standards there, and the United States Committee on Joint Causes of Death for its method of classification of disease, injuries and causes of death on a worldwide scale, facilitating the exchange of information on health and medicine between the countries of the world. The awards will be formally presented October 9, at the annual meeting of the American Public Health Association in Atlantic City, N. J. The awards were presented to the association by the Albert and Mary Lasker Foundation last year for the first time. The winners were selected from a panel of one hundred eighteen candidates by an awards committee, of which Dr. George Baehr, president of the New York Academy of Medicine, was chairman.

American Academy of General Practice.—A group of general practitioners founded the American Academy of General Practice in Atlantic City, N. J., June 10, 1947. Its purposes as outlined in the constitution are (1) to promote and maintain high standards of the general practice of medicine and surgery; (2) to encourage and assist in providing postgraduate study for general practitioners in medicine and surgery and to encourage and assist practicing physicians and surgeons to participate in such training; (3) to encourage and assist young men and women to prepare, qualify and establish themselves in general practice; (4) to protect the right of the general practitioner to engage in medical and surgical procedures for which he is qualified by training and experience, and (5) to advance medical science and private and public health. Membership is limited to members of the American Medical Association and physicians who have been in general practice at least three years and who are interested in continuing in postgraduate work. To continue as a member it is necessary to complete one hundred fifty hours of postgraduate work during each three years period. To be eligible for general membership the applicant must be a physician engaged in general practice, must have graduated from a medical school approved by the American Medical Association, must be licensed in the state in which he practices and must be a member of his local medical association. He must have had at least one year of rotating internship at an acceptable hospital or the equivalent in postgraduate training. He must have been engaged in general practice of medicine for at least five years immediately preceding his application for membership and during that time must have been engaged in some postgraduate educational activities. Any general membership shall terminate at the end of three years, and to be eligible for reelection a general member must have spent a minimum of one month during his three year period in postgraduate training of a nature acceptable to the membership committee. The officers elected were Drs. Paul A. Davis, Akron, Ohio, president; Elmer C. Texter, Detroit, vice president; Ulrich R. Bryner, Salt Lake City, treasurer, and Stanley R. Truman, Oakland, Calif., secretary.

Prevalence of Poliomyelitis.—Reports of cases of poliomyelitis for the periods indicated have been received from the division of public health methods, U. S. Public Health Service:

Division and State	Week Ended			Total to		Total *	
	Sept. 20, 1947	Sept. 21, 1946	Median, 1942-1946	Sept. 20, 1947	Sept. 21, 1946	March 16-Sept. 20, 1947	March 17-Sept. 21, 1946
New England:							
Maine	2	0	2	30	18	27	18
New Hampshire	2	9	2	18	110	14	109
Vermont	2	2	4	22	22	14	18
Massachusetts	28	16	29	216	146	209	142
Rhode Island	12	14	1	120	43	119	43
Connecticut	15	1	11	112	54	99	46
Middle Atlantic:							
New York	158	90	90	686	822	644	789
New Jersey	28	9	17	174	168	168	162
Pennsylvania	40	14	14	286	176	272	162
East North Central:							
Ohio	146	46	37	740	472	736	457
Indiana	17	22	11	162	232	146	227
Illinois	89	210	93	600	1,648	584	1,640
Michigan	77	69	28	377	598	353	590
Wisconsin	27	94	26	125	775	101	762
West North Central:							
Minnesota	29	128	23	175	2,334	162	1,333
Iowa	5	31	14	102	381	94	372
Missouri	9	72	10	87	828	77	821
North Dakota	2	30	2	65	366	60	366
South Dakota	0	9	1	10	314	8	314
Nebraska	16	33	10	153	374	146	373
Kansas	5	68	11	69	643	51	639
South Atlantic:							
Delaware	6	4	2	122	15	122	15
Maryland	9	2	3	58	66	52	64
District of Columbia	3	2	2	12	17	10	16
Virginia	10	6	6	93	85	83	79
West Virginia	17	2	3	78	56	74	53
North Carolina	27	2	3	124	83	109	76
South Carolina	4	0	2	19	18	18	15
Georgia	5	3	3	55	128	48	120
Florida	1	15	2	71	495	46	446
East South Central:							
Kentucky	9	12	5	59	91	58	88
Tennessee	12	5	6	83	132	71	123
Alabama	2	18	3	40	346	27	343
Mississippi	2	3	3	38	244	21	227
West South Central:							
Arkansas	2	13	4	† 61	288	† 50	276
Louisiana	0	20	5	43	302	25	283
Oklahoma	1	15	15	41	292	30	286
Texas	4	33	33	144	773	119	745
Mountain:							
Montana	1	13	7	19	96	17	80
Idaho	9	7	2	102	27	92	27
Wyoming	1	9	1	15	99	12	98
Colorado	4	49	11	45	765	40	764
New Mexico	1	14	2	26	136	23	135
Arizona	0	5	4	28	91	25	88
Utah	0	24	22	8	99	3	93
Nevada	1	0	0	1	3	1	3
Pacific:							
Washington	8	44	20	97	304	89	271
Oregon	1	14	12	56	117	51	113
California	32	124	54	633	1,514	484	1,247
Total	881	1,425	...	†6,496	†17,206	†5,884	16,739
Median, 1942-1946			864		8,882		8,485

* Last two columns show reported incidence since approximate seasonal low week (week ended between March 15 and 21).

† Figures changed by corrected reports.

VIRGIN ISLANDS

Appointments in Department of Health.—Dr. Kund Knud-Hansen has retired as commissioner of health after many years of government service. The acting commissioner is Dr. John S. Moorhead, a native of St. Croix. After seven years of service, Dr. Norman D. Thetford, St. Croix, has taken a terminal leave from the post of the assistant commissioner of health and chief municipal physician. Dr. Roy A. Anduze, a native of St. Thomas, will succeed him on a temporary basis. The Virgin Islands department of health operates general hospitals and clinics and performs the usual functions of a state health department. The two top positions, commissioner of health and chief municipal physician for St. Thomas and assistant commissioner of health and chief municipal physician for St. Croix, are both federal posts in the U. S. Department of the Interior.

PHILIPPINE ISLANDS

Annual Meeting.—At the fortieth annual convention of the Philippine Medical Association in Manila May 7, the following officers were elected: Drs. Januario Estrada, president; Guillermo Rustia, president-elect, and Antonio S. Fernando, secretary-treasurer, all of Manila.

Drive Against Tuberculosis and Malaria.—The United States Public Health Service and the Philippine Health Bureau are joining to cut the island death rate from tuberculosis and malaria. Dr. Antonio Villarama, secretary of health and public welfare, is reported to have said that of one million Filipinos whose chests were x-rayed 6.5 per cent were believed to present active tuberculosis. Thirty malaria control parties through the island are attempting to lower the death rate of 91 for each hundred thousand, nearly twice the prewar rate.

CANADA

McGill to Grant Degree in Tropical Medicine.—The wartime short course in tropical medicine at McGill University Faculty of Medicine, Montreal, has been revised and additional facilities have been provided for study leading to a D.T.M. degree. The course is being conducted by the department of health and social medicine with the assistance of members of other faculties of the university. The final third of the course is a period of specially arranged supervised training in tropical countries. This includes clinical hospital practice and health unit work. For further information address the Chairman, Department of Health and Social Medicine, 490 Pine Avenue, West, Montreal, Canada.

Montreal Medico-Chirurgical Society.—The fifteenth annual clinical convention of the Montreal Medico-Chirurgical Society will be held in Montreal October 6-11. Clinical sessions will be held at various hospitals. The program will also include demonstrations and exhibits. Other meetings of the society will be as follows: On October 24, Dr. H. Jackson Morgan, professor of medicine and head of the department, Vanderbilt University School of Medicine, Nashville, Tenn., will speak on "Peptic Ulcer," and Dr. Samuel J. Shane, Yarmouth, Nova Scotia, on "Cardiac Edema and the Serum Proteins"; on November 7, Dr. Richard J. Bing, assistant professor of surgery, Johns Hopkins Hospital, on "A Selection of Cases for Cardiac Surgery"; on December 5, Dr. Walter F. Kvale, Rochester, Minn., on "The Use of 'Dicumerol.'" On Jan. 9, 1948, Dr Robert R. Linton of Brookline, Mass., will speak on "Thrombophlebitis and Phlebothrombosis in the Medical and Surgical Patient."

CORRECTION

Location of Physicians.—In the ninth of the series of articles on "Location of Physicians," in The Journal, August 30, page 1552, the city of Berkeley, Alameda County, Calif., was erroneously listed as requesting general practitioners. The opening in this instance was for an associate or partner in general practice.

Marriages

Charles Brooker Cheney, New Haven, Conn., to Miss Frances Crandall Wheelock of Orange, N. J., July 26.

Carl Worrell Roessel, New York, to Miss Barbara Madara Barclay of Mount Kisco, N. Y., August 15.

Bernard Owen Burch, Livermore, Calif., to Miss Antoinette Katherine Erro of Fresno at Carmel, June 18.

Wiley Stewart Flanagin, Jacksonville, Fla., to Miss Lillian Greenlee Tate of Murphy, N. C., July 31.

Cornelius Francis Ryan to Miss Dorothy Baumgardt, both of Oneonta, N. Y., September 3.

Frances Arlene Swan, Livonia, N. Y., to Mr. Walter H. Lieneck of Brooklyn August 16.

Thornton Tayloe Perry III, Charles Town, W. Va., to Miss Gisele Chautemps in July.

James R. Mack, Cincinnati, to Mrs. Frances Meyer Friedman of New York in August.

Edward J. Drangınis, Detroit, to Miss Nancy Singleton of Muskegon, Mich., June 28.

Thomas H. Mason, Syracuse, N. Y., to Miss Louise English of Kenmore August 2.

Hans M. Schapire to Miss Lillian Levin, both of Chicago, September 4.

Deaths

Lunsford Dickson Fricks ⊕ Medical Director, U. S. Public Health Service, retired, Seattle; born in Walker County, Georgia, July 18, 1873; Chattanooga (Tenn.) Medical College, 1897; appointed assistant surgeon, U. S. Public Health Service, in 1898, passed assistant surgeon in 1903, surgeon in 1912, senior surgeon in 1929 and medical director in 1930; retired Feb. 1, 1938; director of district number six with headquarters in Seattle from 1927 to 1935, when he became chief quarantine officer in the Hawaiian Islands; in 1942 became health officer of Helena and Lewis and Clark counties health unit in Montana; member of the American Public Health Association, Association of Military Surgeons of the United States, National Malaria Committee (serving for many years as secretary), Southern Medical Association, Veterans of the Spanish-American War and others; director of the extra cantonment sanitation, Camp Zachary Taylor, during World War I; received the degree of doctor of public health from the University of Georgia in 1926; died in U. S. Marine Hospital, July 9, aged 73, of pneumonia.

Robert Nason Nye ⊕ Boston; born in Springfield, Mass., June 3, 1892; Harvard Medical School in Boston, 1918; assistant professor of bacteriology and immunology at the Harvard Medical School; member of the American Society of Clinical Investigation and the American Association of Pathologists and Bacteriologists; director at large of the Massachusetts Tuberculosis Association; councilor of the Massachusetts Medical Society and the Harvard Medical Alumni Association; trustee and treasurer of the Boston Medical Library; served as assistant director of the division of biologic laboratories of the Massachusetts State Department of Public Health; member of the committee on information of the National Research Council and a member of the committee on information, procurement and assignment service of the War Manpower Commission during World War II; affiliated with the Boston City Hospital; managing editor of the *New England Journal of Medicine;* died September 10, aged 55, of reticulum cell sarcoma.

Walter Prentice Bowers ⊕ Clinton, Mass.; born in Clinton, May 19, 1855; Harvard Medical School, Boston, 1879; formerly secretary of the board of registration in medicine; past president of the Massachusetts Medical Society and the Worcester District Medical Society; for many years vice president and a member of the board of trustees of the Clinton Savings Bank and vice president and member of the board of directors of the Clinton Trust Company; served as selectman, a member of the board of health and a member of the town finance committee; in 1921 became managing editor of the *Boston Medical and Surgical Journal,* continuing when it became the *New England Journal of Medicine,* of which he had been editor emeritis; fellow of the American College of Surgeons; received the honorary degree of master of arts from his alma mater in 1935; founder and for many years president of the Clinton Hospital, where he died July 22, aged 92.

Hugh Page Newbill ⊕ Staunton, Va.; born in Norfolk May 28, 1909; University of Virginia Department of Medicine, Charlottesville, 1934; interned at the Norfolk Protestant Hospital in Norfolk and served a residency at the University of Virginia Hospital in University; formerly on the faculty of the Louisiana State University School of Medicine in New Orleans, where he was on the staff of Charity Hospital; formerly assistant professor of neurology and psychiatry at the University of Virginia Department of Medicine and associated with the Davis Clinic of the University of Virginia Hospital in Charlottesville; in charge of the De Jarnette Sanatorium; found dead July 2, in a cabin at Sunnyacres in Albemarle County, aged 38.

Theobald Robert Rudolf, New Orleans; born in New Orleans May 14, 1877; Medical Department of Tulane University of Louisiana, New Orleans, 1902; member of the American Medical Association; at one time taught chemistry and metallurgy in the old New Orleans College of Dentistry; for many years professor of chemistry in the Boys' High School, which later became Warren Easton High School; at one time assistant in clinical microscopy and bacteriology at the New Orleans Polyclinic; served during World War I; specialist on the medical rating board of the U. S. Veterans Administration; affiliated with the Hotel Dieu; died June 11, aged 70, of coronary occlusion.

Francis Anton Goeltz ⊕ Salt Lake City; born in New York Dec. 13, 1876; New York University Medical College, New York, 1898; specialist certified by the American Board of Urology, Inc.; member and past president of the Western Branch of the American Urological Association; past president of the Utah State Medical Society and the Salt Lake County Medical Society; fellow of the American College of Surgeons; served during World War I; affiliated with St. Mark's, Salt Lake County General and the Dr. W. H. Groves Latter-Day Saints hospitals; died June 25, aged 70, of carcinoma and heart disease.

Roy Carleton Perkins ⊕ Bay City, Mich.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1903; formerly member of the city board of education and board of health, councilor of the Tenth District of the Michigan State Medical Society; served on the Mexican border and during World War I; at one time an officer in the medical corps of the National Guard; formerly member of the state council of health; on the staffs of the Mercy Hospital and the Bay City General Hospital, where he died June 18, aged 68, of coronary thrombosis.

Rollie Hayden Alexander, Owenton, Ky.; Kentucky School of Medicine, Louisville, 1898; died in the King's Daughters Hospital, Frankfort, July 20, aged 78.

William Gilbert Anderson, New Haven, Conn.; Western Reserve University Medical Department, Cleveland, 1883; director of the gymnasium, emeritus, at Yale University; organized New Haven Normal School of Gymnastics, now known as the Arnold College; died July 7, aged 86.

Jacob Brouner Austin, South Euclid, Ohio; Western Reserve University Medical Department, Cleveland, 1902; served overseas during World War I; died July 13, aged 71, of coronary thrombosis.

James H. Benefield, Fort Smith, Ark. (licensed in Arkansas in 1903); member of the American Medical Association; served on the staff of Sparks' Hospital; died July 8, aged 80, as the result of an automobile accident.

Frances S. Carothers Blanchard, Wheaton, Ill.; Woman's Hospital Medical College, Chicago, 1885; died July 4, aged 91.

Joseph Hoge Bogle, Collinsville, Ala.; Vanderbilt University School of Medicine, Nashville, Tenn., 1900; died in the Holy Name of Jesus Hospital, Gadsden, July 5, aged 67, following an operation for stone in the bladder.

Frank E. Bowman ⊕ Detroit; Detroit College of Medicine, 1907; served on the staff of the Harper Hospital; died in the Highland Park General Hospital August 9, aged 73, of auricular fibrillation and old coronary thrombosis.

Samuel Joseph Brown ⊕ Panora, Iowa; Rush Medical College, Chicago, 1898; secretary treasurer and past president of the Dallas-Guthrie Counties Medical Society; served as mayor, councilman, school director and president of the school board; died July 5, aged 75, of angina pectoris.

William J. Brown, Dover, Ark. (licensed in Arkansas in 1903); died in St. Mary's Hospital, Russellville, June 20, aged 69.

Joseph Lyman Bryan ⊕ Xenia, Ill.; St. Louis University School of Medicine, 1906; district health superintendent, Illinois Department of Public Health; died in St. Paul, Minn., July 12, aged 66, of a skull fracture received in an automobile accident.

Delane Stow Calhoun, Ruston, La.; Washington University School of Medicine, St. Louis, 1904; died July 8, aged 68.

Robert William Carrall, Blue Island, Ill.; McGill University Faculty of Medicine, Montreal, Que., Canada, 1893; died June 28, aged 77.

William Morrill Colby, Randolph, Mass.; Boston University School of Medicine, 1898; died in Plymouth June 26, aged 79, of carcinoma of the prostate.

Charles Rodgers Conklin, New York; Albany Medical College, 1899; New York Homeopathic Medical College and Hospital, 1901; for many years medical director of the medical department of the Children's Aid Society; served on the staffs of the Vanderbilt Clinic, Laura Franklin Hospital, Metropolitan Hospital and the Flower and Fifth Avenue Hospitals, where he died July 7, aged 73, of intestinal obstruction.

Lee W. Cotton, Enid, Okla.; Missouri Medical College, St. Louis, 1887; member of the American Medical Association; served as county health officer; medical examiner for the draft board during World War I; died June 8, aged 86.

Jesse Hill Crouch ⊕ Richmond, Va.; Medical College of Virginia, Richmond, 1911; director of public health for Henrico County; formerly epidemiologist of the Montana State Board of Health and of the Fort Worth, Texas, health department; at one time health officer of Williamsburg; died in the Stuart Circle Hospital June 13, aged 60, of coronary occlusion.

John Emerson Derbyshire, Van Buren, Ind.; Rush Medical College, Chicago, 1903; member of the American Medical Association; on the staff of the Marion (Ind.) General Hospital; died June 21, aged 73, of arteriosclerosis.

James R. Des Portes, Fort Mill, S. C.; Medical College of South Carolina, Charleston, 1900; member of the American Medical Association; past president of the South Carolina Medical Association and the York County Medical Society; died June 2, aged 68.

Charles Ezekiel Dumke, Denver; Denver and Gross College of Medicine, Denver, 1906; member of the American Medical Association; died in St. Luke's Hospital June 21, aged 66, of chronic myocarditis and arteriosclerosis.

Charles Frederick Duncan, Jacksonville, Fla.; College of Physicians and Surgeons, Boston, 1910; chief of the surgical staff of the Brewster Hospital, where he died recently, aged 67, of heart disease.

William Chauncey Fox, Chicago; the Hahnemann Medical College and Hospital, Chicago, 1914; died in Fremont, Mich., June 6, aged 63.

Frederick Standish Greene, Northampton, Mass.; Yale University Medical School, New Haven, Conn., 1926; died in the Veterans' Hospital June 11, aged 49, of postencephalitic Parkinsonism.

Louis Richard Haas ⊕ Pittsburg, Kan.; Cornell University Medical College, New York, 1929; specialist certified by the American Board of Ophthalmology and the American Board of Otolaryngology; fellow of the American College of Surgeons; diplomate of the National Board of Medical Examiners; affiliated with the Mount Carmel Hospital; died June 30, aged 44, of coronary diease.

Arthur Otto Hahl ⊕ Clarence, N. Y.; University of Buffalo School of Medicine, 1908; served as medical examiner for local schools and as health officer of Clarence; died in Pasadena, Calif., June 17, aged 66, of coronary thrombosis.

Marcus Lafayette Hickson, Fort Valley, Ga.; Emory University School of Medicine, Atlanta, 1915; served during World War I; died June 18, aged 54, of heart disease.

Gregory L. Higgins, Carbondale, Pa.; College of Physicians and Surgeons, Baltimore, 1910; served on the staff of St. Joseph's Hospital; died June 25, aged 63, of fat embolism and a fractured femur received in a fall.

Benjamin Franklin Iden Jr., ⊕ Washington, D. C.; University of Virginia Department of Medicine, Charlottesville, 1909; served during World War I; on the staffs of the Doctors and Homeopathic hospitals; died July 6, aged 63.

John Martin Jackson, Aurora, Ind.; Medical College of Indiana, Indianapolis, 1905; member of the American Medical Association; served during World War I; died June 30, aged 66, of cerebral thrombosis.

Merit S. Jewell, Little York, Ill.; Louisville Medical College, 1898; member of the American Medical Association; president of the board of health; died June 28, aged 73, of cerebral hemorrhage.

Joseph Wencel Jinderlee ⊕ Cresco, Iowa; Keokuk Medical College, College of Physicians and Surgeons, 1903; died June 13, aged 73, of diabetes mellitus.

John W. Keithley, Beloit, Wis.; Kentucky School of Medicine, Louisville, 1893; member of the American Medical Association; died June 28, aged 82.

Edward Kingsley, Brookline, Mass.; Laval University Faculty of Medicine, Quebec, Canada, 1918; died May 13, aged 57, of carcinoma of the right lung.

Theodore Kuttner ⊕ New York; University and Bellevue Hospital Medical College, New York, 1906; member of the American Chemical Society; for many years associate in chemistry at the Mount Sinai Hospital; inventor of the Kuttner-Leitz microcolorimeter; died July 7, aged 70, of coronary occlusion.

Napoleon La Bonte, Clayton, Ind.; Indiana University School of Medicine, Indianapolis, 1913; member of the American Medical Association; died June 26, aged 64, of coronary occlusion and chronic duodenal ulcer.

Johan Herman Lee, Madison, Wis.; Kongelige Frederiks Universitet Medisinske Fakultet, Oslo, Norway, 1899; died in Wilmington, Calif., June 10, aged 76, of carcinoma of the colon.

William Hall Lewis ⊕ Donora, Pa.; Jefferson Medical College of Philadelphia, 1893; also a graduate in pharmacy; affiliated with Charleroi-Monesson Hospital in Charleroi; died July 3, aged 78, of arteriosclerosis and cerebral hemorrhage.

Maurice F. Linquist, New Haven, Conn.; New York Homeopathic Medical College and Hospital, New York, 1891; served on the staffs of the Hospital of St. Raphael and the Grace Hospital, where he died June 26, aged 78.

James Terry McConnaughey, Mount Pleasant, Iowa; Keokuk Medical College, College of Physicians and Surgeons, 1903; member of the American Medical Association; died June 18, aged 71, of chronic nephritis.

Reuben Terrell McCraw ⊕ Oxford, Ala.; University of Alabama School of Medicine, 1913; died in the Anniston Memorial Hospital, Anniston, June 9, aged 58, of coronary thrombosis.

Carl Raymond Madera, Upper Darby, Pa.; Hahnemann Medical College and Hospital, Philadelphia, 1933; member of the American Medical Association; died in the Hahnemann Hospital July 4, aged 47, of pneumonia.

Joseph James McGarry ⊕ North Tarrytown, N. Y.; Fordham University School of Medicine, New York, 1918; member of the American Society of Anesthetists; police surgeon; on the staff of the Tarrytown Hospital, where he died June 30, aged 51, of carcinoma of the lung with metastasis to the vertebrae.

Stephen Eugene McKenna ⊕ Los Angeles; University of California Medical School, San Francisco, 1937; formerly an intern at the Orange County Hospital in Orange, Calif.; resident in surgery at the Queen of Angels Hospital; served overseas during World War II; died June 16, aged 37, of bulbar poliomyelitis.

Archibald Carlyle McPhaden, Concrete, Wash.; Bennett Medical College, Chicago, 1911; member of the American Medical Association; on the staff of the Memorial Hospital in Sedro Woolley; died June 28, aged 63, of acute coronary occlusion.

Rudolph Manns ⊕ Denver; Gross Medical College, Denver, 1900; for many years surgeon for the Colorado and Southern Railway Company; member of the staffs of St. Joseph's, St. Luke's, Mercy, Children's, Presbyterian and National Jewish hospitals; died recently, aged 71, of coronary occlusion.

Joseph Hyman Marko, Cleveland; University of Virginia Department of Medicine, Charlottesville, 1946; interned at the Mount Sinai Hospital; killed in the crash of a DC4 airliner in the Blue Ridge mountains of Virginia June 13, aged 24.

John Tracy Melvin ⊕ Porterville, Calif.; Gross Medical College, Denver, 1891; an Affiliate Fellow of the American Medical Association; formerly affiliated with the Indian Service; served as president of the Tulare County Tuberculosis Association and as director of the board of the California State Tuberculosis Association; at one time medical director of the Tulare-King Counties Joint Tuberculosis Hospital in Springville; formerly member of the Colorado State Board of Health; died June 21, aged 85.

William Edwin Miller, Camden, N. J.; University of Pennsylvania Department of Medicine, Philadelphia, 1893; died in the Cooper Hospital June 30, aged 74, of fracture of the eleventh thoracic vertebra and arteriosclerosis.

William C. Mitchell, Tunbridge, Vt.; University of Vermont College of Medicine, Burlington, 1907; served as health officer; affiliated with the Veterans Administration Hospital in White River Junction; died June 20, aged 66, of pulmonary edema and chronic endocarditis.

David Bruce Moyer ⊕ Lansdale, Pa.; Medico-Chirurgical College of Philadelphia, 1908; died June 25, aged 64, of coronary occlusion.

Harold Gert Muller ⊕ Cato, N. Y.; Schlesische-Friedrich-Wilhelms-Universität Medizinische Fakultät, Breslau, Prussia, 1934; served overseas during World War II and was awarded the Bronze Star Medal for bravery; affiliated with the Lee Memorial Hospital in Fulton and the City Hospital in Auburn; died in the City Hospital, Syracuse, June 27, aged 38, of mumps and encephalitis.

George A. Nickelson, Pittsburgh; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1902; died June 24, aged 72.

Charles Henry Pate, Scranton, S. C.; Medical College of the State of South Carolina, Charleston, 1904; died June 26, aged 66, of bronchopneumonia, cerebral hemorrhage and diabetes mellitus.

Edward Cornelius Perry, Avon, N. Y.; Columbia University College of Physicians and Surgeons, New York, 1892; past president and treasurer of the Livingston County Medical Society; for many years county coroner, village health officer and surgeon for the Erie Railroad; died June 30, aged 81, of prostatic carcinoma.

Malcolm Hay Phillips, Pittsburgh; University of Pittsburgh School of Medicine, 1908; died in St. John's General Hospital recently, aged 61, of influenza, pneumonia and coronary artery disease.

Louis George Reynolds, Los Angeles; Northwestern University Medical School, Chicago, 1908; died in the Cedars of Lebanon Hospital June 22, aged 76.

William Clyde Roberts, Tallahassee, Fla.; the Hahnemann Medical College and Hospital, Chicago, 1906; at one time assistant medical director of the New York Life Insurance Company in New York; died June 22, aged 65, of congestive heart failure and essential benign hypertension.

Lee Rose, Carpenter, Ky.; Lincoln Memorial University Medical Department, Knoxville, 1914; member of the American Medical Association; chairman of the county board of education; served during World War I: shot and killed July 1, aged 61, by cattle thieves.

Oscar Leo Rudersdorf, Evanston, Ill.; Bennett Medical College, Chicago, 1912; member of the American Medical Association; affiliated with St. Francis Hospital; died June 28, aged 58, of coronary occlusion.

John William Sherman ⊕ Mirando City, Texas; Medical Department of Grant University, Chattanooga, Tenn., 1906; died in Miami, Fla., June 19, aged 60, of coronary thrombosis.

Allie Marion Stuart, Manning, Ark. (licensed in Arkansas in 1903); died May 14, aged 66.

William Sweemer ⊕ Milwaukee; College of Physicians and Surgeons of Chicago, 1884; an Affiliate Fellow of the American Medical Association; served as emeritus professor of diseases of children at the Milwaukee Medical College, of which he had been a founder; died June 21, aged 93, of senility.

Harry French Thompson, Forest City, Iowa; Rush Medical College, Chicago, 1894; member of the American Medical Association; past president of the Winnebago County Medical Society; died June 17, aged 77, of coronary occlusion.

Charles Root Turner, Philadelphia; University College of Medicine, Richmond, 1899; served as dean of the University of Pennsylvania School of Dentistry; died in a hospital at Raleigh, N. C., June 11, aged 71.

Benjamin Van-Sant, Turbotville, Pa.; Jefferson Medical College of Philadelphia, 1890; died June 16, aged 83, of chronic myocarditis.

Capt. Myer H. Boyarsky
M. C., A. U. S., 1917-1945

Howard Lull Van Winkle ⊕ Cedar Rapids, Iowa; Long Island College Hospital, Brooklyn, 1907; past president of the Linn County Medical Society; at one time affiliated with the New York State Board of Health in Albany and on the faculty of the Syracuse University College of Medicine in Syracuse, N. Y.; served during World War I; on the staffs of the Mercy Hospital and St. Luke's Methodist Hospital; died June 22, aged 64, of carcinoma of the pancreas.

Leroy Powell Van Winkle ⊕ Port Jefferson Station, L. I., N. Y.; Long Island College Hospital, Brooklyn, 1903; member of the American College of Radiology; specialist certified by the American Board of Radiology; consulting roentgenologist at the Huntington Hospital in Huntington and the Greenpoint Hospital in Brooklyn; visiting roentgenologist at the Central Islip State Hospital in Central Islip, John T. Mather Memorial Hospital and St. Charles Hospital for Crippled Children; died June 8.

Frank S. Vernon, Charleston, Mo.; Missouri Medical College, St Louis, 1893; served as coroner and county physician; formerly on the staff of the State Hospital in Farmington; died June 28, aged 76, of heart disease.

Heilman Curtis Wadsworth, Washington, Ind.; Rush Medical College, Chicago, 1909; member of the American Medical Association; councilor of the Second District of the Indiana State Medical Association; served during World War I; died June 6, aged 68.

Marcus Fitzherbert Wheatland Jr., Camden, N. J.; Howard University College of Medicine, Washington, D. C., 1927; member of the American Medical Association; died in the University of Pennsylvania Hospital, Philadelphia, June 7, aged 48.

Herbert Temple Wikle ⊕ Brooklyn; Vanderbilt University School of Medicine, Nashville, Tenn., 1919; assistant clinical professor of surgery at the Long Island College of Medicine; fellow of the American College of Surgeons; past president of the Brooklyn Surgical Society and the New York Gastroenterological Society; on the staffs of Cumberland Hospital, Methodist Hospital and the Brooklyn Hospital, where he died June 26, aged 53, of coronary thrombosis.

Alexander Woodward Winkler ⊕ New Haven, Conn.; Harvard Medical School, Boston, 1931; assistant professor of medicine at the Yale University School of Medicine; diplomate of the National Board of Medical Examiners; specialist certified by the American Board of Internal Medicine; member of the American Society of Clinical Investigation; on the staff of the New Haven Hospital, where he died June 26, aged 38, of hypertensive cardiovascular disease.

Capt. Vladimir M. Sasko
M. C., A. U. S., 1914-1945

George Roy Wiseman, Amherst, Ohio; Ohio Medical University, Columbus, 1900; served overseas during World War I; on the staff of St. Joseph's Hospital in Lorain; died June 20, aged 69, of coronary heart disease.

Edward W. Yates, Foreman, Ark. (licensed in Arkansas in 1929); member of the American Medical Association; died July 11, aged 47.

KILLED IN ACTION

Myer Harold Boyarsky, Burlington, Vt.; University of Vermont College of Medicine, Burlington, 1942; diplomate of the National Board of Medical Examiners; interned at St. Luke's Hospital in New Bedford, Mass.; began active duty as a first lieutenant in the medical corps, Army of the United States, on July 31, 1943; later promoted to captain; regimental surgeon of the 47th Infantry Regiment, 9th Division; received the Purple Heart, the Bronze Star and the Silver Star; killed in action in Germany April 19, 1945, aged 27.

Vladimir Molnar Sasko, Chicago; the School of Medicine of the Division of Biological Sciences, Chicago, 1938; interned at the University of Chicago Clinics and the City Hospital in Cleveland; began active duty as a first lieutenant in the medical corps, Army of the United States, July, 1, 1941; promoted to captain; on Dec. 10, 1944 en route by plane from Dobodura, New Guinea, to Hollandia, plane failed to arrive at its destination for reasons unknown; presumed dead in the Southwest Pacific Dec. 11, 1945, aged 31, by the War Department.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Aug. 23, 1947.

The Early Diagnosis of Poliomyelitis

At the present rate of notification of poliomyelitis 5,000 cases are expected before the end of the year, which is much in excess of any previous year since the disease became notifiable in 1912. At a special meeting of some 80 health officers a number of procedures for dealing with the outbreak were recommended. Swimming baths should not be closed unless there are some definite indications that patients may have been infected there. But the number of children admitted on any one day should be restricted, and they should be advised to stay in the baths for only a short period. Overcrowding is probably a more important factor than infection of the water. Hired bathing suits and towels should be washed and laundered before reuse. Schools should reopen as usual unless there are special indications to the contrary. Nursery schools and day nurseries should be closed on the occurrence of the first case. The chances of the spread of the virus there are regarded as greater than in ordinary schools. Children and adolescents who have been in contact with a patient should be warned to keep away from other children and young persons for three weeks.

Poliomyelitis Film for the Instruction of Physicians

Because of the importance of early diagnosis and the fact that few physicians have had an opportunity to see patients in the early preparalytic stage, the Ministry of Health has had a short film on the early diagnosis of poliomyelitis prepared. The British Medical Association has arranged to assist in distributing copies of the film and to have it shown at the meetings of the divisions of the association. By the end of the month there should be a hundred copies of the film ready for distribution. A chart of the age incidence is followed by symptoms. An effective scene shows the early restlessness of the young adult. A feature of this epidemic has been early involvement of the cranial nerves, and an outstanding close-up shows a palate with just enough weakness on the left to be pulled slightly toward the right. Other signs of the disease are demonstrated. Finally, simple measures to prevent the spread of infection are shown. The running time is only fifteen minutes. The latest figures, just announced, show that for the week ending August 16 646 cases of poliomyelitis were reported in England and Wales, compared to 448 and 568 in the weeks ending August 2 and 9. London had 89 notifications, Birmingham 18 and Manchester 15 for the week ending August 16. The total for that week was the largest in the epidemic.

Midwifery Under the National Health Service Act

The Minister of Health has issued a guide to local health authorities on their duties under the National Health Service Act. In the maternity service every woman will be entitled to a family physician, whom she will probably consult when she believes that she is pregnant. Subject to regulations which have yet to be made, it is contemplated that every general practitioner will be given an opportunity to say whether or not he desires to practice midwifery under the act and to answer calls by midwives for medical aid. The experience of practitioners who desire to do so will be reviewed by a local committee of a wholly professional character (consisting of local general practitioners, a consultant obstetrician and local authority's health officer). This committee will draw up a list of approved local practitioners and indicate to those who are not accepted for such a list the need for further obstetric experience. The list will be reviewed from time to time to insure that the physicians on it continue to undertake enough midwifery to remain competent. The duty of a family physician when consulted by a woman who is pregnant will be to see that she knows how to obtain the services of a midwife; if he himself is not on the approved list he will help the woman to choose a general practitioner obstetrician from the list. The physician selected will give her the necessary antepartum and postpartum care and will be present at the confinement if he considers it necessary or is called by the midwife.

PARIS

(From Our Regular Correspondent)

Aug. 30, 1947.

Outbreak of Smallpox

An epidemic of smallpox broke out at the beginning of this year. The epidemiologic investigation established that the infection was brought into the city in December 1946 by a patient from Liège, Belgium, where an epidemic prevailed. During December and January some unrecognized cases of severe smallpox must have occurred in Paris; between February 10 and March 30, 33 cases, 2 of which were fatal, had been observed. The epidemic seems to have been confined to the Claude-Bernard, Salpétrière and St. Louis hospitals. It was of the alastrim form and spread among unvaccinated children and among adults either not recently vaccinated or vaccinated without a positive effect. Strict measures of isolation and vaccination have been taken. Vaccinations were extended to inhabitants of buildings where the disease had appeared and neighboring buildings. On advice of the Superior Council of Public Hygiene, the members of the hospitals' staffs, the inpatients and outpatients and the visitors were vaccinated as well as those in the Institutions of the Paris District, all nurslings from the first month onward, school children and persons in homes for the aged and the incurable. Centers for gratuitous vaccination were opened in every quarter of town. In Paris 292,787 vaccinations were performed between March 11 and April 30 by the Service of the Seine District Prefecture. One million vaccinations were performed in the Seine district. Thanks to these measures, the epidemic soon subsided. The only complications arising from the numerous vaccinations were the deaths of 2 children given their first vaccination, 1 of whom died of bronchopneumonia. It has also been found that a postvaccinal complication may arise when, for some reason or other, the vaccine penetrates into the blood circulation. R. Boulain, P. Uhry and Gueniot have vaccinated 33 diabetic persons which, they explained at a meeting of the Medical Society of the Paris Hospitals, brought about an aggravation of diabetes in 7 patients. It is of interest that, at the same time, epidemics of variola were reported in Liège and in the British port of Grimsby. Several cases also occurred in Germany, Spain, Portugal, Italy and New York.

Congress of French-Speaking Pediatricians

The first postwar meeting of French-speaking pediatricians was held in Lyons under the presidency of Professor G. Mouriquand; three hundred French pediatricians and numerous Belgians, Luxemburgers, Dutch, Portuguese, Swiss and Czechoslovaks took part.

Nontuberculous Meningitis of Children.—R. Martin, B. Sureau and A. Milet pointed out that sulfonamide drugs in the treatment of meningococcic meningitis of children bring about 92 per cent of recoveries. In recurrent cases and in nurslings they add to the sulfonamide therapy the use of penicillin. **R. Clement'** observations on 50 cases of acute meningitis, half tr
with sulfonamide drugs only and the oth
bined penicillin and sulfonamide compo

results obtained by the foregoing practitioners. If the general condition and the temperature of the nursling does not improve, Clement performs ventricular paracentesis, followed by an injection of penicillin as early as the second day of the disease. Lelong, R. Joseph, A. Rosier and F. Alison were equally in favor of ventricular paracentesis with an early injection of penicillin. Pneumococcic meningitis, notwithstanding the combined sulfonamide-penicillin therapy, has still a 50 per cent death rate. R. A. Marquezy and Boeswilwald reported their observations on 19 cases of pneumococcic meningitis; of 10 patients treated with only sulfonamide drugs, there were 10 deaths; of 9 patients given sulfonamide-penicillin therapy, 4 recovered. They emphasized the value of early treatment; in nurslings they perform intraventricular injections at the rate of at least two each day (20,000 Oxford units). However, despite the continuation of local penicillin therapy, in 2 cases they have seen the pneumococci reappearing in the cerebrospinal fluid on the sixteenth and the twenty-first day. For the treatment of meningitis due to Hemophilus influenzae E. Gorter (Leyde) proposed intramuscular and intrarachidian injections of streptomycin, complemented, in extremely serious cases, with sulfadiazine, penicillin and, if possible, rabbit antiserum.

Chronic Rheumatic Infections of Children.—M. Lamy, Miss M. Jammet and M. Aussanaire have explained that chronic rheumatic manifestations, whatever be their type, certainly are ascribable to an undetermined infectious process. In the ankylotic form, with osteoarticular lesions, death, according to these authors, occurs after a few years; the prognosis of Still's disease (multiple rheumatoid arthritis) is also bad. To the contrary, R. Clement's observations revealed that, of 6 cases of the latter form, kept under observation for years, 3 lead an almost normal life after cures by sulfonamide therapy, which brought the sedimentation rate back to normal; the fourth case made a spontaneous recovery twelve years ago, after failure of all treatments. In his study of 295 patients kept under observation for ten years, R. Lesne has come to the conclusion that the chronic rheumatism of children is never the sequela of Bouillaud's disease (rheumatic fever). G. Mouriquand and G. Wenger (Lyons) have noted the lasting improvement of the pain by means of parathyroidectomy in a case of chronic rheumatism deformans after failure of treatment by calcium, ascorbic acid and vitamin D. L. Willemin-Clog (Clermont-Ferrand) has insisted on the therapeutic effect of immobilization and of orthopedic apparatuses in chronic rheumatism deformans.

JERUSALEM

(From Our Regular Correspondent)

Sept. 7, 1947.

The D. P. Disease

The name D. P. disease was chosen by P. Robinson for a complex of symptoms which he observed in a number of patients in the Allied Commission camps in Italy. In his paper in the *Acta Medica Orientalia* (**6**:188, 1947) he reports on the symptomatology. From 37 cases under observation the following histories were given almost unanimously: The patients felt fairly well as long as they were in concentration camps or with the partisans. Some suffered from angular stomatitis with or without photophobia and blurred vision. Some had night blindness. Others were suffering from edema, partly with peripheral neuritis. The first signs of stomach-intestine trouble appeared immediately after the patients had come to the UNRRA or AC camps. The main complaints were fulness and pressure in the stomach immediately after meals and a feeling of burning or pains late at night. The complaints were alleviated during the intake of food. Ocular trouble was present in a number of cases, and circumcorneal injections were sometimes found to be the cause. Otherwise, the physical examination showed normal results. Tests of the digestive juice revealed in all cases a complete achlorhydria. When roentgen examination of the stomach was done, delayed emptying of the stomach was always found.

From these symptoms the clinical suspicion of ariboflavinosis seemed justified. Administration of riboflavin was usually not successful. Only large doses of liver extract given over prolonged periods achieved definite and lasting improvement, and when the therapy was continued a complete cure resulted.

Two patients were operated on, their stomach trouble giving ground to the belief that they were suffering from gastric ulcers. During the operations, however, it was determined that ulcers did not exist but there was an atrophic gastritis. This atrophic gastritis is well known for its favorable reaction to liver therapy.

In summary Robinson states that the D. P. disease is an atrophic gastritis combined with vitamin B deficiency.

Palestine Society for Medical History

The opening session of the Palestine Society for Medical History took place in April 1947. Leading physicians of the country participated. In his opening address Dr. S. Muntner stressed the necessity and the aims of a Society for Medical History. Lectures held during the first session included, among others, a report by Dr. Sherman, president of the Association of Jewish Physicians in Palestine, on the "History of Jewish Medicine in Palestine during the Past Century." Professor Feigenbaum reported on "Medical Nomenclature, Considering in Particular the Ophthalmologic Terms in the Talmud."

In the first pamphlet published by the Palestine Society for Medical History, the tasks set for the society are sketched, and it is mentioned that shortly a series of publications will appear, which will be devoted to the history of Jewish medicine. The first book of this series, the "Book of Medicine" by Assaf, is already going into print. The reference to the first book written in Hebrew by R. Shabbatai Dolono in Christian Europe is of special importance within the frame of the newly founded Society for Medical History, since it was written in Salerno, Italy, exactly a thousand years ago. The foundation of the medical faculty of the Hebrew University in Jerusalem coincides with the thousandth anniversary of Jewish medicine in Europe.

Medical Department of the Jewish National and University Library

In July the new medical library was opened in the Medical School of the Hebrew University, the Nathan Ratnoff building. The medical library, previously part of the general library of the university, has thus obtained a room of its own, easily accessible to all research men and scholars working in the Medical School of the Hebrew University or in the Hadassah Hospital. The opening ceremony was led by Dr. Jaski, head of the Hadassah University Hospital. He pointed out the merits of two physicians who paved the road toward the success now achieved: Dr. Julius Jarcho, New York, a benefactor of the medical library system in Palestine, and Dr. Emanuel Libman, whose connections with the medical world of Palestine are known. A third physician who should have been mentioned is Dr. Joseph Chasanowitz, who more than fifty years ago in Russia conceived the idea of a great university library in Jerusalem, and who realized his idea in decades of struggling and collecting.

The director of the Jewish National and University Library, Dr. Joel, referred to the great difficulties caused by this new project, but he also pointed out how carefully the new library was equipped by the administration of the university and how it will be utilized in the future.

The medical library comprises, at present, about 22,000 books. In cooperation with the committee of the Jewish Medical Association, under Dr. Doljanski, the medical library was arranged in its new rooms with excellent taste. One reading room contains all the medical magazines and periodicals of the University library and has a selected hand library with more than three hundred current periodicals from all over the world.

Dr. Wallach has been placed in charge of the medical library.

MOSCOW

(From Our Regular Correspondent)

Aug. 19, 1947.

The Sixth All-Union Congress of Pediatricians

In Moscow from May 27 to June 1, 1947 the Sixth All-Union Congress of Pediatricians was held, the first since the war. About 1,800 pediatricians were present Professor George N. Speransky, corresponding member of the Academy of Sciences of the U. S. S. R., member of the Academy of Medical Sciences, was president-elect of the congress. The first meeting was devoted to the memory of the founder of Russian pediatrics, Professor Nil F. Filatov, in connection with the centenary of his birth.

Mary D. Kovrigina, Deputy Minister of Health of the Soviet Union, in opening the congress noted that in 1947 about 25 per cent of all sums granted for public health care—4 billion rubles (about 755 million dollars)—have been given to expenditures for children's and maternity health protection. There are in the Soviet Union more than 18,500 pediatricians, not including 12,000 physicians of rural areas working on children's health and many thousands of medical nurses and teachers.

Nutritional disturbances especially in young children was one of the topics discussed. The principal thesis of Professor Mikhail S. Maslov's report was that the disturbances of children's nourishment resulting from different diseases may be seen simultaneously with symptoms of "toxicosis" and various septic processes. Dystrophy, "toxicosis" and sepsis may successively pass one into another. A young child, even if healthy, is not resistant enough to the action of toxins; all his regulative systems—reticulocytic, endothelial, fermentative and vitamin systems, hemoparenchymatous and hemoencephalic barriers—are insufficient. The endocrine and vegetative portions of the nervous system cannot at this age regulate all the functions because they are not developed completely. The maintenance of the normal condition of the child's organism depends on early diagnosis.

Professor Julia F. Dombrovskaya spoke on alimentary disturbances. The principal diseases of the undernourished child in early infancy are pneumonia and digestive diseases; in the preschool and school age, cardiovascular diseases and endocrine and vegetative disturbances. The initial digestive impairments result in disturbances of gastric secretion, i. e., hypochlorhydria, hyperchlorhydria or achlorhydria. Later disturbances of absorption and digestion may be present. The stool becomes enriched with neutral fats and fatty acid salts—signs of unbalanced hepatic function, according to Professor Speransky.

Professor Nicolas A. Krasnogorsky, member of the Academy of Medical Sciences, noted that alimentary and digestive disturbances in young children reduce the efficiency of the central nervous system. Cerebral and cortical excitability diminish, and the correlation between cortical and subcortical activity becomes delayed. Simultaneously, disturbances of cerebral and endocrine origin are observed, such as anorexia, polyuria and excessive thirst. Hypothyreosis may be present. Sometimes after prolonged dystrophy real endocrine disturbances such as hypophysial dwarfism and hypogenitalism may take place. Cardiovascular disturbances are also present—fall of blood pressure, dilatation of the right auricle and impairment of the pulse rhythm and frequency.

Professor Olga D. Sokolova-Ponomareva from the Omsk (Siberia) Medical Institute, corresponding member of the Academy of Medical Sciences, reported on "Blood Transfusion as a Curative Method for Young Children." On the basis of 6,000 blood transfusions she demonstrated its positive effect on the red blood cells, albumin and ferment contents and the result and improvement of the circulation, including capillaries.

Professor Alga P. Molchanova spoke on the significance of albumins and mineral substances in children's nutrition. Milk is the principal source of albumin for the child, containing in best physiologic proportions calcium, phosphorus and other valuable substances. Assistant doctor Sophy A. Bajandina reported on "Immunity Readings During Infectious and Septic Processes in Infants." She demonstrated that the maternal unboiled freshly drawn breast milk gives the best results in the treatment of nurslings' diseases, especially pneumonia and sepsis.

Professor Vera A. Krestovnikova reported that she discovered in the nasopharynx of newborn children with infectious diseases a predominance of hemolytic streptococci. In her opinion the nasopharynx is the primary nidus and entrance for toxic diseases. Dr. I. A. Stern, on the basis of Professor Krestovnikova's bacteriologic observations, divides the diseases of newborn into three principal groups: (1) acute diseases of the respiratory tract (nasopharyngitis, pneumonia and influenza), (2) septic purulent diseases and (3) infectious toxic diseases with entrance in the nasopharynx. Dr. Stern used for their prophylaxis a staphylococcic vaccine with good results.

One meeting was devoted to the etiology, pathogenesis and clinical course of pneumonia in infants, prematurely born infants and children of early age.

Prof. Mikhail A. Skvortsov stated that interstitial pneumonias often arise in the course of septic diseases. Their characteristic properties are an absence of exudate in the bronchi and alveoli simultaneously with large infiltrative and proliferative changes in alveolar and interlobar septums and in the peribronchial cellular tissue. Clinically the interstitial pneumonia is characterized by a rapid attack of cyanosis and by difficult breathing.

Interesting data were presented by the Kiev University docents D. L. Segalov and I. A. Maximovich. They differentiated two types of pneumonias in the case of infants with disturbed alimentation: (1) a usual reactive pneumonia and (2) an asymptomatic dysergic form. This differentiation is based on clinical observations of the course of the disease and on histologic study.

Professors E. I. Kvater and S. A. Jagunov in their reports, "Contact Work Between Obstetricians and Pediatricians" and "Rational Newborn Service," turned the congress' attention to the need for careful work of both types of specialists, especially in questions of correct lactation, preparation of the mammary gland for feeding, prophylactic measures against mastitis, report of the effect of obstetric operations on the newborn and of the significance of acute infectious diseases on the future sexual development of girls.

More than eighty reports were presented at the congress. In the Soviet Union there exist fifteen state scientific investigatory institutes for maternal and child welfare. This year for the work of only three principal institutes 29 million rubles (about $5,500,000) are granted. There are sixty-two pediatric clinics as departments of medical institutes with a total of more than one thousand specialists and scientific workers in pediatrics. There are also fifty scientific pediatric societies.

In closing the congress Professor George N. Speransky, the president, urged its members to creative work to solve great problems of Soviet pediatrics, emphasizing the role of scientific societies in the development of the correct mode [illegible]diatric thought.

Correspondence

THE STABILITY OF PROTHROMBIN

To the Editor:—The recent current comment on Stability of Prothrombin in THE JOURNAL, September 9, page 36, contains certain statements to which I am compelled to take exception; particularly to one: "Unreliable values for prothrombin obtained by the one stage method etc." It might be well to inquire concerning the actual facts. In 1943 I reported in the *American Journal of Physiology* (**140**:212 [Nov.] 1943) my discovery that the delayed prothrombin time in stored plasma was due to the disappearance of a factor which was different from the prothrombin principle, which is reduced in "dicumarol" poisoning and which is adsorbable by aluminum trihydroxide, $Al(OH)_3$. From these results I concluded that prothrombin was a complex and that one of the components was this labile factor whose activity was slowly diminished in stored plasma by oxidation. Recently Owren (*Lancet* **1**:446 [April 5] 1947) reported a case in which the bleeding tendency appears definitely to be due to a lack of this factor. That this factor is missed in the analysis of stored plasma by the more elaborate two stage method is probably accounted for by the possibility that the thromboplastin employed (beef lung) contains sufficient quantity of the labile factor as an impurity to mask the defect in the highly diluted plasma.

By means of my one stage method I have discovered two families in each of which several members have a congenital hypoprothrombinemia; but, curiously, the factor deficient in the one family is different from the one lacking in the second family (*Lancet* **2**:379 [Sept. 13] 1947). The concentration of the labile factor is normal in the affected members of both families. This clearly suggests that the prothrombin activity as indicated by the prothrombin time of the one stage procedure is dependent on three factors. A diminution of any one of these three factors sufficient to increase the prothrombin time to 20 second (in human beings) appears to produce a bleeding tendency. Since the test of prothrombin time, when carefully and correctly performed, has a sensitivity so delicate that a variation of only 2 or 3 seconds marks the difference between normal hemostasis and a hemorrhagic diathesis, it seems high time to stop quibbling about the theoretic reliability of the one stage method and to concentrate on having the test carried out correctly and accurately (according to my specific directions) in both the clinical and the research laboratories, thereby putting an end to the abominable confusion concerning prothrombin values which is rampant at present.

ARMAND J. QUICK, M.D., Milwaukee.

CAVERNOUS SINUS THROMBOSIS

To the Editor:—In an article entitled "Cavernous Sinus Thrombosis" by Samuel L. Fox and J. Brooks West published in THE JOURNAL, August 23, the authors say on page 1454: "A careful review of the literature by us fails to reveal any report of a case in which 'dicumarol' was employed, with or without other agents, so that the use of this drug in 1 of our cases may well represent its earliest use in treatment of this condition."

In an article entitled "A Case of Cavernous Sinus Thrombosis Successfully Treated by Combined Anticoagulant and Chemotherapy," which was published in the *Annals of Internal Medicine* (**24**:1093 [June] 1946) we state on page 1095 that this patient was treated with "dicumarol."

C. REICH, M.D.
D. LIKELY, M.D.
M. YAHR, M.D.
R. BARON, M.D.
New York.

PROPHYLAXIS AGAINST OPHTHALMIA NEONATORUM

To the Editor:—At the June session of the American Medical Association this year, I presented a resolution before the Section on Ophthalmology condemning the use of silver nitrate and urging its replacement by antibiotics in the prevention of ophthalmia neonatorum. A copy of this resolution was published in THE JOURNAL July 5.

In the August 9 issue of THE JOURNAL there appears an important publication entitled "Prophylaxis Against Ophthalmia Neonatorum" by H. Charles Franklin of Memphis, Tenn. This report is a comparison of the efficacy of penicillin compared with silver nitrate. Although this piece of research work has many weak points, it emphasizes the beginning of the end of silver nitrate in the prevention of ophthalmia neonatorum. Like most clinicians, Dr. Franklin seeks to point out the fallacy which most of us have glorified since the year 1884, that one drop of any chemical can stop the growth of any pathogenic organism. Ophthalmologists, particularly those in Philadelphia, have discovered that the efficacy of silver nitrate is in the use of irrigating solutions, principally salt solution and boric acid. Keeping in mind that the silver served only as a silver lining of imagination, the mechanical flushing of the eyes actually accomplished the prevention of the disease.

Credé originally emphasized the cleansing of the birth canal, using silver nitrate in the babies' eyes only as a secondary thought. Through the years both the obstetricians and the ophthalmologists forgot completely about the source of infection, namely the birth canal, and found it convenient to believe in the safety of one drop of silver nitrate in the eyes of the newborn. It seems short of folly for physicians to use silver nitrate today in lieu of the effectiveness of antibiotics.

It is unscientific to treat or prevent any disease except at its sources. It is my contention that the babies' eyes should receive no preventive treatment whatever. Emphasis should be placed on partial sterilization of the birth canal for at least twenty-four hours before delivery. This can be accomplished by the use of penicillin vaginal suppositories or by the parenteral use of penicillin, using a single dose of 300,000 units in oil. It is rightly believed that the vaginal tract cannot be completely sterilized. It is not necessary to sterilize the vaginal tract completely before delivery. Approximately 98 per cent of all babies would escape infection even if 100 per cent of the mothers were infected with pathogenic organisms. In other words, there is a natural safety of 98 per cent by natural means. It is not necessary to put irritating chemicals in the eyes of all newborn babies in order possibly to save infection of the other 2 per cent. It is my personal experience that all cases of gonorrheal ophthalmia in the newborn can be positively cured in a few days. There is no need for a single case of blindness to result. A decade ago, practically all cases of ophthalmia neonatorum required weeks of treatment and in almost every case some damage to the eyes was noted. The baby world is free from this danger in the antibiotic period.

The prevention of ophthalmia neonatorum should be directed to the treatment of the infected expectant mother by the use of antibiotics, and the eyes of the newborn should receive no treatment whatever. Should an occasional case of infection in the newborn develop, penicillin will cure it.

I have not mentioned the many organisms responsible for ophthalmia neonatorum. There is only one damaging organism and that is the gonococcus. Cases of infection from other organisms do not result in blindness. Since the gonococcus can be controlled by antibiotics, the prevention of ophthalmia neonatorum of the future must be directed to the expectant mother alone.

LOUIS LEHRFELD, M.D.,
1321 Spruce Street,
Philadelphia 7.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

NATIONAL BOARD OF MEDICAL EXAMINERS EXAMINING BOARDS IN SPECIALTIES

Examinations of the National Board of Medical Examiners and the Examining Boards in Specialties were published in The Journal, Sept. 27, page 246.

BOARDS OF MEDICAL EXAMINERS

Alabama: *Examination.* Montgomery, June 22-24, 1948. Sec., Dr. D. G. Gill, 519 Dexter Ave., Montgomery 4

Arizona: * *Examination.* Phoenix, Oct 7-8 Sec., Dr. J. H. Patterson, 826 Security Building, Phoenix.

Arkansas: * *Examination.* Texarkana, Nov 6-7, 1947. Sec., L. J. Kosminsky. Texarkana. *Eclectic.* Little Rock, Nov. 6. Sec., Dr. Clarence H. Young, 1415 Main St., Little Rock

California: *Written.* Sacramento, Oct. 20-23. *Oral.* Los Angeles, Nov. 8-9. Sec., Dr. Frederick N. Scatena, 1020 N St., Sacramento 14.

Connecticut: *Examination.* Hartford, Nov 11-12. Sec., Dr. Creighton Barker, 258 Church St., New Haven.

Delaware: *Examination.* Dover, Jan 13-15 *Endorsement.* Dover, Jan. 20. Sec., Dr. J. S. McDaniel, 229 S. State St., Dover.

Florida: * *Examination.* Jacksonville, Nov 25-26. Sec., Dr. Harold D. Van Schaick, 6675 Windsor Lane, La Gorce Island, Miami.

Georgia: Atlanta, Oct. 14-16. Sec., Mr. R. C. Coleman, 111 State Capitol, Atlanta, 3.

Hawaii: *Examination.* Honolulu, Ja [illegible], 1948. Sec., Dr. S. E. Doolittle, 881 S. Hotel St., Honolulu, T. H.

Idaho: Boise, Jan. 13-15. Sec., Miss [illegible] S. Mulliner, 355 State Capitol Bldg., Boise.

Illinois: Chicago, Oct. 14-16. Supt. of Registration, Dept. of Registration and Education, Mr. Philip M. H[illegible] Springfield.

Indiana: *Examination.* Indianapolis, J[illegible]-18 Sec., Board of Medical Registration and Examination, Dr. Paul R. Tindall, K of P Bldg., Indianapolis.

Kansas: Topeka, Dec. 3-4. Sec., Board of Medical Registration and Examination, Dr. J. F. Hassig, 905 N. 7th St., Kansas City.

Maine: * Portland, Nov. 12-13. Sec., Dr. A. P. Leighton, 192 State Street, Portland.

Maryland: *Medical Examination.* Baltimore, Dec. 9-12. Sec., Dr. Lewis P. Gundry, 1215 Cathedral St., Baltimore. *Homeopathic. Examination.* Baltimore, Dec. 9-10. Sec., Dr. J. A. Evans, 612 W. 40th St., Baltimore.

Massachusetts: *Examination.* Boston, Nov. 18-21. Sec., Dr. H. Q. Gallupe, 413-E State House, Boston.

Michigan: * *Examination.* Lansing, Nov [illegible] Sec., Board of Registration in Medicine, Dr. J. E. McIntyre, 100 W. Allegan St., Lansing 8.

Minnesota: * Minneapolis, Oct. 21-23. Sec., Dr. J. F. DuBois, 230 Lowry Medical Arts Bldg., St. Paul 2.

Mississippi: *Endorsement.* Jackson, Dec. 1947 Asst. Sec., State Board of Health, Dr. R. N. Whitfield, Jackson.

Missouri: *Examination.* St. Louis, Oct. 20-22 Exec. Sec., Mr. John A. Hailey, State Capitol Bldg., Jefferson City.

Montana: Helena, Oct. 6-8. Sec., Dr. O. G. Klein, First National Bank Bldg., Helena.

Nevada: Carson City, Nov. 3. Sec., Dr. G. H. Ross, 215 N. Carson St., Carson City.

New Jersey: *Examination.* Trenton, Oct. 21-22. Sec., Dr. E. S. Hallinger, 28 W. State St., Trenton.

New Mexico: * Santa Fe, Oct. 13-14. Sec., Dr. LeGrand Ward, 141 E. Palace Ave., Santa Fe.

New York: *Examination.* Albany, Buffalo, New York and Syracuse, Oct. 6-9, 1947. Sec., Dr. Jacob L. Lochner, Jr., Education Bldg., Albany.

North Carolina: *Endorsement.* Raleigh, Oct. 20. Act. Sec., Mrs. L. J. McNeill, 226 Hillsboro St., Raleigh.

North Dakota: Grand Forks, Jan. 6-9. Sec., Dr., G. M. Williamson, 4½ S. Third St., Grand Forks..

Ohio: *Examination.* Columbus, Oct. 14. *Endorsement.* Columbus, Dec. 2-4. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus.

Oklahoma: *Endorsement.* Oklahoma City, Oct. 28-29. Sec.; Dr. F. Clinton Gallaher, 813 Braniff Bldg., Oklahoma City.

Oregon: * *Endorsement.* Portland, Oct. 17-18. Exec. Sec., Miss L. M. Conlee, 608 Failing Bldg., Portland.

Pennsylvania: *Examination.* Harrisburg, Jan. 1948. Acting Sec., Board of Medical Education and Licensure, Mrs. M. G. Steiner, 351 Education Bldg., Harrisburg.

South Carolina: Columbia, Nov. 10-12. Sec., Dr. N. B. Heyward, 1329 Blanding St., Columbia.

South Dakota: * Pierre, Jan. 20. Sec., State Board of Health, Dr. Gilbert Cottam, Capitol Bldg., Pierre.

Texas: San Antonio, Nov. 12-14, 1947. Sec., Dr. T. J. Crowe, 918-20 Texas Bank Bldg., Dallas 2.

Utah: *Reciprocity.* Oct. 8. *Examination.* Salt Lake City, June, 1948. Asst. Dir., Department of Registration, Miss Rena B. Loomis, 324 State Capitol Bldg., Salt Lake City.

Virginia: Richmond, Dec. 4-6. Sec., Dr. K. D. Graves, 30½ Franklin Rd., Roanoke.

Wyoming: *Examination.* Cheyenne, Oct. 6. Sec., Dr. G. M. Anderson, Capitol Bldg., Cheyenne.

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* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Arizona: Dec. 16. Sec., Mr. Francis A. Roy, Science Hall, University of Arizona, Tucson.

Arkansas: *Examination.* Little Rock, Oct. 7. Sec., Mr. L. E. Gebauer, 701 Main St., Little Rock.

Colorado: *Examination.* Denver, Dec. 17-18. Sec., Dr. Esther B. Starks, 1459 Ogden St., Denver.

Connecticut: *Examination.* New Haven, Oct. 11. Exec. Asst., State Board of Healing Arts, Mr. W. G. Reynolds, 250 Church St., New Haven 10.

District of Columbia: *Examination.* Washington, Oct. 20-21. Sec., Commission on Licensure, Dr. G. C. Ruhland, 6012 E. Municipal Bldg., Washington.

Florida: *Examination.* Gainesville, Nov. 1. Final date for filing application is Oct. 16. Sec., Dr. W. M. Emmell, University of Florida, Gainesville.

Iowa: Des Moines, Jan. 13, April 13, July 13, Oct. 12. Sec., Dr. Ben H. Peterson, Coe College, Cedar Rapids.

Michigan: *Examination.* Ann Arbor and Detroit, Oct. 10-11. Sec., Miss Eloise LeBeau, 101 N. Walnut St., Lansing.

Minnesota: *Examination.* Minneapolis, Oct. 7-8. Sec., Dr. Raymond N. Bieter, 105 M Hall, University of Minnesota, Minneapolis.

Nebraska: *Examination.* Omaha, Oct. 7-8. Dir., Bureau of Examining Boards, Mr. Oscar F. Humble, State Department of Health, Room 1009, State Capitol Bldg., Lincoln 9.

New Mexico: *Examination.* Santa Fe, Nov. 2. Sec., Miss Marion M. Rhea, 114 E. Marcy, Santa Fe.

Oklahoma: Spring 1948. Sec., Dr. Frank Clinton Gallaher, 813 Braniff Bldg., Oklahoma City.

Oregon: *Examination.* Portland, Dec. 6. Admin., Mr. C. D. Byrne, Univ. of Oregon, Eugene.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Federal Food and Drug Acts: Sufficiency of Evidence to Seize and Condemn Colonic Irrigator.—The United States filed actions for the seizure and condemnation of two devices intended for use as colonic irrigators, bearing plates reading "Tox-Eliminator Company, Inc., Glendale, California" and accompanied by circulars relating thereto. From judgments dismissing the actions, the United States appealed to the Circuit Court of Appeals, Tenth Circuit.

It was stipulated that the sale of the two devices in question had been made, one to a doctor of naturopathy and the other to a doctor of chiropractic; that the devices were displayed, together with certain circulars extolling their merits, in the places of business of these two men for the purpose of selling the services of the devices; that both the devices and the circulars had been transported in interstate commerce. The devices are described as colonic irrigators. They differ from an ordinary enema device in that they have an inflow and an outflow tube. The inflow tube is equipped with a thermostatic valve, by which the temperature of the water can be regulated, and a pressure valve, which limits the pressure of the water entering the body to 40 inches. The outflow tube has a transparent arrangement by which the contents coming from the bowels can be seen and observed as they leave the body. The devices are attached to an ordinary water faucet. One of the circulars involved was labeled "The Modern Scientific Drugless Way to Health," and the other was called "The Magic Power of Water." Much of the controversy centers around the representations contained in these two circulars.

The government's case was based on the testimony of five medical experts, whose qualifications in their respective fields stand admitted. These experts testified that, while they had neither used the device nor seen it in use, they understood fully the principles on which it operated, namely, the washing out of the colon by forcing a stream of pulsating water into the intestines. They explained in considerable detail the physiology of the human system as well as the causes, and treatments therefor, of the diseases listed in the circulars. They admitted, however, that the causes of a number of the diseases listed were still unknown and that the treatments therefor were not definitely catalogued. They testified that intestinal toxemia, referred to in the circular, was not a condition known to medical science and that the function of the colon had little, if anything, to do with the numerous diseases mentioned. In their opinion a colonic irrigation will not cure hardening of the arteries, migraine, lumbago, colitis, gallbladder complications, high or low blood pressure, irregular heart, rheumatism or any of the other named diseases. In conclusion, they said that colonic irrigations are helpful in a limited sense only as relief measures in temporary discomfort caused by severe impaction or as a preparation in case of some major abdominal surgical operations, but that colonic irrigations do not, and cannot, constitute an appropriate treatment for any of the diseases listed in the circulars.

The defense, on the other hand, offered the testimony of Neal Bishop, a chiropractor, and of J. O. Wolvin, the manufacturer and distributor of the devices in question. Bishop testified that the statements in the circulars were true; that he had treated patients with such a device in connection with other therapy, such as chiropractic adjustments and diathermy, and that its use was helpful. He did not, however, testify specifically that its use had effected a cure in a single case of any of the diseases enumerated in the circulars. Wolvin testified that the use of the device had cured him of a chronic case of asthma and said that when the asthma has a tendency to recur, his use of the device eliminates it. The only other evidence offered by the defense consisted of excerpts from several medical books, only one of which stated that a colonic irrigation would aid in the treatment of any of the diseases named in the circular, other than some diseases of the colon.

The excerpts from these medical books were introduced by the defense over the objection of the government. While the authorities are not in complete accord, the weight of authority, said the court, is that medical books and treatises are not admissible to prove the statements therein contained. The trial court, therefore, erred in admitting and receiving in evidence excerpts from these books offered by the defendants for the purpose of establishing the truth of the statements contained therein.

While the trial court did not exclude the testimony of the five medical experts offered by the government, it was of the apparent opinion that their testimony was entitled to no consideration because they had neither tested the device in question nor observed it in operation. That these medical experts were competent and qualified to testify as to the matters in issue, said the appellate court, is clear. They were not disqualified merely because they had neither used the devices in question nor seen them in operation. They testified not only that they were conversant with colonic irrigation but also that they were familiar with the principles of these particular devices. Fundamentally, these devices are not essentially different from any other circulatory apparatus for the purpose of giving an enema. The testimony of these medical experts was competent and constituted substantial evidence.

The trial court found that the two circulars in question constituted labeling as defined in the Food and Drug Act. It did not make a separate finding whether the statements contained therein were true or constituted mislabeling. It must, however, have been of the opinion that it did not constitute mislabeling, otherwise it could not have concluded as a matter of law that the relief prayed for should not be granted. In order for the government to prevail, said the appellate court, it was not necessary to prove that all the representations in the two circulars were false. The charge of mislabeling would be established if the evidence proved any one of the representations to be false. Here the substantial evidence by the government establishes the falsity, with minor exceptions, of practically every one of the broad claims set up in these circulars. The defendants offered positive evidence only as to one claim—asthma. It must therefore be conceded that the government has established the falsity of many of these claims not only by the greater weight of the evidence but by all the evidence in the record.

It may be conceded, the appellate court continued, that the device's use in flushing out the colon under expert supervision has a tendency to eliminate some toxins therefrom, thus preventing their entrance into the blood stream and thus contributing somewhat to the purification of the blood and improvement in general health. But this is not what the labeling circulars state. In effect, they hold the machine out as a cure-all for all the ills that affect the human body. It may be argued that the circulars do not promise a full cure in all these cases but only relief and improvement. A casual reading of the circulars is sufficient to establish beyond doubt that the statements in these circulars would induce and were intended to induce the belief in the minds of many of the ailing and suffering that the "toxeliminator" promised absolute and general relief from all their ailments. The circulars, concluded the appellate court, are inherently dishonest and deceiving and constitute misbranding within the meaning of the Act.

Accordingly the judgments of the trial court denying the government's petition for seizure and condemnation were reversed.—*United States v. One Device, Intended for Use as a Colonic Irrigator, 160 F. (2d) 194 (1947).*

Medical Experts: Training and Experience Required.—The defendants were jointly indicted for murder, found guilty and sentenced to death. From such conviction they appealed to the Supreme Judicial Court of Massachusetts.

The deceased had been shot in the back. The shirt worn by him was found beside the body and there was no bullet hole in it. At the trial the medical examiner, called by the commonwealth, testified that there was in the middle of the back of the deceased a small bullet wound; that "there was very little powder marks outside but there was a ring which could have been made by the muzzle . . . or the jacket of a gun"; that "Beneath the skin was this fairly wide cavity which was blackened and filled pretty much with burnt powder . . ."; that "there was quite a cavity below the skin which was blackened and covered with burnt powder fragments"; that the powder marks on the outside were "just speckles"; that the ring was "interrupted" and about a half inch in diameter; and that there was very little powder on the skin. Thereafter, subject to exception, the witness was allowed to testify that there was at least some powder on the skin about the wound; that the black of the powder was underneath the skin; and that in his opinion the muzzle of "the gun was directly on the skin."

The defendants assign error in that the medical examiner was not sufficiently qualified as an expert to testify that the marks in or about the wound were caused by powder or that the muzzle of the gun was directly on the skin of the deceased. Bearing on qualification, there was evidence that the witness had been a practicing physician, specializing in surgery; that he had been a medical examiner for fifteen years; that he had operated perhaps three times on persons having gun shot wounds, including the type inflicted at close range and the type inflicted at long range; that as medical examiner he had looked at quite a number—about fifteen—bodies where death had been caused by bullet or gun shot wounds, of which about fourteen were bullet wounds; that he believed about eight of these were from bullets fired at close range, all of which, however, were fired through clothing; that he had examined, he should say, six bullet wounds in a nude part of the body, some of these being in the head; but that he had never examined a body where the bullet entered the back of an individual without any clothing.

The defendants argued that the witness was not qualified because it did not appear that he had ever seen a wound from a bullet fired at close range that had not passed through clothing. Assuming that the presence or absence of clothing might affect the appearance of the wound from a bullet fired at close range, said the court, we think it clear, nevertheless, that the professional experience of the witness, particularly with respect to wounds from bullets, both those fired at long range and those fired at short range, would place him in a better position than the average juryman to form conclusions whether the "speckles" observed by him outside the wound and the black appearance under the skin were due to powder and as to the position of the gun when the bullet was fired. A witness's training and experience may well qualify him to give an opinion in reference to a problem which he had never before encountered in precisely the same form. There was no error in allowing the medical examiner to testify as he did.

Other contentions of the defendant were also overruled and the conviction for murder was affirmed.—*Commonwealth v. Bellino, 71 N. E. (2d) 411 (Mass., 1947).*

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1937 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied with stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Journal of Clinical Pathology, Baltimore

17:427-506 (June) 1947

*Hemoglobinuric Nephrosis in Traumatic Shock. T. B. Mallory.—p. 427.
Studies on Phagocytosis. R. Altschul and Aganeta M. Friesen.—p. 444.
*Agnogenic Myeloid Metaplasia of the Spleen. Report of Case with Necropsy Findings. S. A. Levinson and L. R. Limarzi.—p. 449.
Survey of Commercial Rh Antiserums. M. G. Levine and R. E. Hoyt.—p. 462.
Role of Presumed Serum Protein in Pathogenesis of Erythroblastosis Fetalis. J. Gurevitch, Z. Polishuk and D. Hermoni.—p. 465.
Nonproduction by Penicillin of False Positive Reactions in Kahn and Kolmer Tests. R. D. Turner.—p. 469
Some Clinical Observations on Prothrombin Test. B. Fisher.—p. 471.
Genitourinary Infection: Bacteriologic Study of 150 Cases. J. McKay, C. E. Edwards and Helen Blake Leonard.—p. 479.
Leukocyte Counts in Normal White Women Before and After Delivery. L. R. Cason and G. W. Phillips.—p. 483

Hemoglobinuric Nephrosis in Traumatic Shock.—According to Mallory, army experience has made many physicians familiar with the syndrome of renal insufficiency following resuscitation from shock. Lucké has shown that a similar lesion, which he has termed "lower nephron nephrosis," may develop in mismatched blood transfusions, the crush syndrome, blackwater fever, heat stroke, high altitude anoxia, thermal and chemical burns, carbon tetrachloride and mushroom poisoning, and sulfonamide sensitivity. The author has seen it following anaphylactic shock, severe streptococcic infection and infantile gastroenteritis. It is possible to recognize cases in the literature under such titles as interstitial nephritis and hepatorenal syndrome. His discussion is based on 60 fatal cases of battle injury which were studied clinically and pathologically. These observations are reinforced by a survey of 200 similar cases from the files of the Fifteenth Medical General Laboratory. The constant clinical features are oliguria, azotemia, excretion of pigment and albumin in an acid urine and fixation of specific gravity. The appearance of mild hypertension on the third or fourth day is inconstant but is of great diagnostic importance. The initial histologic change appears eighteen to twenty-four hours after injury and consists of lipid vacuolization of the ascending limbs of Henle's loop. The second stage is precipitation of pigment in the distal convoluted and collecting tubules. Moderate dilatation of convoluted tubules follows pigment precipitation. Sometimes on the third day, regularly on the fourth and fifth days, necrosis and regeneration of epithelium in the ascending limbs and distal tubules become evident and simultaneously lymphocytes appear between the tubules and about the vessels. From the fifth day on, rupture of tubules with herniation of their content into the stroma and consequent granuloma formation become frequent. The last development in many cases is the formation of nonocclusive mural thrombi in many of the small veins. In clinicopathologic correlation two factors were constant: the excretion of benzidine positive pigment in the urine and recovery from shock or related physiologic abnormality. Renal insufficiency was found to antedate all structural change but was never progressive in the absence of a demonstrable pigment nephropathy. Although pigment precipitation is an essential factor in the development of the "shock kidney," the mechanism of its effect remains unelucidated.

Agnogenic Myeloid Metaplasia of Spleen.—Levinson and Limarzi point out that Jackson and others in 1940 described a syndrome of extramedullary myeloid metaplasia which they designated as agnogenic. Because this condition is often confused with myelogenous leukemia or acquired hemolytic jaundice, these authors separated agnogenic myeloid metaplasia of the spleen from other conditions. Extramedullary myelopoiesis may occur in various infectious and septic states such as metastatic carcinoma to bone and leukemia. In these types of extramedullary myelopoiesis the clinical and pathologic disorders are known and the therapy and prognosis are obvious. In agnogenic myeloid metaplasia the diagnosis may not always be established, but often one can, by hematologic methods (peripheral, sternal and splenic puncture), clinical examinations and later by microscopic studies of the spleen separate this entity from others simulating it. Levinson and Limarzi tell of a housewife aged 49 in whom agnogenic myeloid metaplasia of the spleen was diagnosed clinically. The essential clinical findings of this condition are insidious onset of progressive weakness, abdominal distress and enlargement of the spleen, with or without hemorrhagic tendency. The hematologic findings are characterized by a slightly elevated leukocyte count with the presence of immature red and white elements in the peripheral blood. A biopsy of bone marrow may show normal, hypoplastic or hyperplastic marrow with myeloid immaturity and no involvement of the myeloblastic tissue. The megakaryocytes are increased and present a normal dispersion. The spleen is enlarged and shows histologically fibrosis and myeloid metaplasia. There was no evidence of myeloid metaplasia in any of the organs other than the spleen.

American J. Digestive Diseases, Fort Wayne, Ind.

14:189-214 (June) 1947

Irritable Colon: Recognition and Management. P. B. Van Dyke.—p. 189.
Role of Vitamin Therapy in Management of Diabetes Mellitus. E. L. Sevringhaus.—p. 193.
Spontaneous Hyperinsulinism (Harris Syndrome): Survey of 28 Cases. W. Cane.—p. 195.
Explanation of Anal Pruritus. F. Hoelzel.—p. 200.
Pruritus Ani. N. B. Jaffe.—p. 202.
Evaluation of Antacid Activity of Protein Hydrolysate Using Graduated Doses in Human Stomach. Z. X. Rossien.—p. 205.
Addition of Casein to Mixed Protein Diet. R. A. Harte.—p. 208.

American Journal of Diseases of Children, Chicago

73:651-778 (June) 1947

*Kernicterus: Follow-Up Study of 35 Erythroblastotic Infants. R. Stiller.—p. 651.
Management of Whooping Cough: Special Reference to Infants. J. L. Kohn and A. E. Fischer.—p. 663.
*Familial Hypoplastic Anemia of Childhood: Report of 8 Cases in Two Families with Beneficial Effect. S. Estren and W. Dameshek.—p. 671.
Cardiac Complications in Salmonella Infections. B. H. Shulman.—p. 688.
Introduction to Problem of Prematurity. S. Z. Levine.—p. 694.
Prevention and Control of Infections. J. H. Hess.—p. 696.
Management of Emergencies. S. H. Clifford.—p. 706.
Feeding of Premature Infants. H. H. Gordon.—p. 713.

Kernicterus: Follow-Up on 35 Erythroblastic Infants.—Stiller says that, with the advent of knowledge concerning the pathogenesis and treatment of erythroblastosis fetalis, interest has been focused on the possible untoward effects of a successful therapeutic regimen that may result in a live but helpless infant with kernicterus. The term "kernicterus" was devised by Schmorl in referring to what Orth had called "nuclear jaundice." Among the records in the Children's Hospital in Washington from 1920 up to and including Dec. 31, 1945 there were 47 cases that appear to fit the pattern of erythroblastosis. An attempt was made to have the mother and child in these families typed and to ascertain the child's developmental status. The criteria for inclusion in this series were the typical pattern of an Rh-positive child born of an Rh-negative mother, with the presenting complaint of either neonatal jaundice or anemia. Of 35 for whom follow-up records were obtainable, 29 are still living and 6 have died. The necropsy reports of the 6 deaths failed to show correlation between the degree of clinical involvement of the central nervous system and the pathologic picture. Of the 29 living children 4 show signs of involvement of the central nervous system that may be interpreted as evidence of kernicterus. Two of these 4 showed evidence of involvement of the central nervous system in the neonatal period. None of the remaining 25 normal children showed such neonatal involvement. Transfusion therapy should be directed against the anemia and is of no value in ameliorating the damage to the brain that has already occurred.

Familial Hypoplastic Anemia of Childhood: 8 Cases in Two Families.—Estren and Dameshek present two families with familial hypoplastic anemia. Three of 7 siblings in the first family and 5 of 14 siblings in the second family had apparently identical disorders characterized by peripheral pancytopenia, pallor, weakness and a bleeding tendency. Hypoplasia of the marrow was present in those cases in which the marrow was examined. These are the first recorded instances in which hypoplasia of the marrow has been noted as the sole familial trait. The closest similar cases in the literature are those of Fanconi, in which hypoplasia of the marrow was one of several congenital and familial abnormalities. Familial hypoplastic anemia must be added to the other heredofamilial hematologic conditions. Splenectomy in 1 of the patients resulted in pronounced improvement. In cases of complete or almost complete aplasia of the marrow and in cases in which a reduction of blood platelets is accompanied by a reduction or absence of megakaryocytes in the marrow, splenectomy would not be of value. Splenectomy may be considered as offering a beneficial therapeutic result when megakaryocytes are present to some degree in the marrow, and particularly when lack of platelet production in the megakaryocytes can be demonstrated and the red cell elements show some evidence of regenerative activity.

American Practitioner, Philadelphia

1:575-630 (July) 1947

Common Meningitides: Diagnosis and Treatment. L. K. Sweet.—p. 575.
Pinworm Infection and Trichinosis. F. J. Brady.—p. 583.
Treatment of Some Intestinal Worm Infections. W. H. Wright.—p. 589.
Treatment of Ambulatory Chronic Cardiac Patient. W. S. Horn.—p. 591.
Medical Witness in Court: Expert Testimony. O. Hawkinson.—p. 595.
Id.: Abuses of Medical Testimony: Remedy; The Minnesota Experiment. E. W. Roemer.—p. 600.

Archives of Neurology and Psychiatry, Chicago

57:661-794 (June) 1947

*Loss of Axis Cylinders in Sclerotic Plaques and Similar Lesions. T. J. Putnam and L. Alexander.—p. 661.
Topographic Distribution of Lesions in Central Nervous System in Japanese B Encephalitis: Nature of Lesions, with Report of a Case on Okinawa. W. Haymaker and A. B. Sabin.—p. 673.
Electrocerebral Shock Therapy: Reconsideration of Former Contraindications. M. T. Moore.—p. 693.
Electroencephalographic Study of Electric Shock Therapy: Psychotic Patients Treated in a United States Naval Hospital. J. D. Moriarty and J. C. Siemens.—p. 712.
*Electroencephalographic Studies Following Electric Shock Therapy: Observations on 51 Patients Treated with Unidirectional Current. A. A. Weil and W. C. Brinegar.—p. 719.
Orientation to Forensic Psychiatry. H. A. Davidson.—p. 730.

Loss of Axis Cylinders in Sclerotic Plaques.—Putnam and Alexander call attention to the fact that different stains lead to contradictory observations on the damage to axis cylinders in sclerotic plaques. The ideal method of resolving the difficulty would be to find a stain which combines the best features of the technics which are found to give conflicting results. Such a method has recently become available: the Bodian stain, which depends on the reduction of a silver proteinate. Twenty-six blocks containing 31 distinct plaques were taken from embedded material from 7 cases of multiple sclerosis. Studies by means of the Bodian silver stain for axis cylinders showed that some degree of damage or destruction of axons occurred in all the sclerotic plaques investigated. In all but 2 of the plaques examined the axis cylinders were reduced to a small fraction of the normal number. The pathologic appearance of surviving axis cylinders was more striking in fresh plaques than in old ones. Similar changes of about the same degree of intensity were seen in some other lesions of vascular origin not sufficiently intense to cause complete necrosis. The evidence here presented is compatible with the point of view that the parenchymal lesions in multiple sclerosis are secondary to a local disturbance of circulation. It suggests that the conception of a specific process of demyelination peculiar to multiple sclerosis deserves revision. The fact that fibrous gliosis is not observed in the most acute lesions of multiple sclerosis suggests that the glial scar is secondary to the local destructive process. The fact that many axis cylinders are damaged in lesions of multiple sclerosis has also an important bearing on prognosis and treatment. The acute stage of swelling and distortion of axis cylinders seems to correspond to the acute stage often observed in symptoms. There seems to be little hope that treatment would increase the number of existing axis cylinders once the lesion is formed.

Electroencephalographic Studies Following Electric Shock.—In the 51 patients studied by Weil and Brinegar varying numbers of electric shock treatments were administered by a machine delivering unidirectional fluctuating current. Brain waves were recorded prior to treatment, four days after the last treatment and fourteen days thereafter. The highest percentage of abnormal records was obtained in manic-depressive patients, closely followed by that for the schizophrenic group. Patients with involutional psychoses and psychoneuroses demonstrated more normal preshock records. In general, an increase of abnormality in the electroencephalographic record was observed after treatment, but the electroencephalograms of a large percentage of patients receiving less than ten shock treatments had returned to normal fourteen days after the last treatment. The electroencephalographic changes seemed to be less pronounced after shock treatment when unidirectional current was used than when alternating current was used. Postshock electroencephalograms closely resembled the records of epileptic patients. The following clinical relationships between various changes in the brain waves and the psychiatric picture were found: (*a*) An abnormal preshock electroencephalogram usually indicated that a longer course of treatment was necessary in order to achieve clinical improvement. (*b*) A highly abnormal electroencephalographic record fourteen days after the last treatment was usually found with patients requiring further hospitalization. (*c*) A normal preshock electroencephalogram promised a better clinical result from electric shock treatment than an abnormal preshock record.

Blood, New York

2:311-406 (July) 1947

Development of Inclusion Bodies Containing Ribose Nucleic Acid in Myeloma Cells After Injections of Stilbamidine Determination of Stilbamidine in Myeloma Tissue. I. Snapper, A. E. Mirsky, B. Schneid and M. Rosenthal.—p. 311.
Anemia of Infection: VI. The Influence of Cobalt on Anemia Associated with Inflammation. M. M. Wintrobe, M. Grinstein, J. J. Dubash, S. R. Humphreys, Helen Ashenbrucker and Wanda Worth.—p. 323.
Monocytic Leukemia: Case Report Illustrating Variations in Clinical Picture. A. E. Rappoport and V. H. Kugel.—p. 332.
Electrocardiographic Findings in Leukemia. S. F. Aronson and Elie Leroy.—p. 356.
Serum Protein Changes in Myelogenous and Lymphocytic Leukemias and Hodgkin's Disease. G. A. Nitshe Jr. and P. P. Cohen.—p. 363.
Improved Demonstration of Circulating Antibodies in Hemolytic Anemia by Use of a Bovine Albumin Medium. J. Neber and W. Dameshek.—p. 371.

Canadian Journal Public Health, Toronto

38:261-310 (June) 1947

Presidential Address. A. R. Foley.—p. 261.
State of Health of the People of Canada in 1945. H. A. Ansley and J. T. Marshall.—p. 269.
*Increased Efficiency of Diphtheria Toxoid When Combined with Pertussis Vaccine: Preliminary Note. L. Greenberg and D. S. Fleming.—p. 279.
*Retention of Ascorbic Acid in Canned Fruit Juices and Tomatoes During Storage After Opening. H. D. Branion and C. R. Cameron.—p. 283.
Experience with Salmonella Typing in Canada. L. E. Ranta and C. E. Dolman.—p. 286.

Diphtheria Toxoid and Pertussis Vaccine.—Greenberg and Fleming found evidence in experiments on guinea pigs that the addition of pertussis vaccine to diphtheria toxoid enhances the immunizing power of the latter. Quantitative determinations demonstrated that as the numbers of pertussis organisms are increased the immunizing efficiency of the diphtheria toxoid also is increased. The concentrations of pertussis organisms usually found in commercial preparations increased the immunizing efficiency of the toxoid at least twofold.

Retention of Ascorbic Acid in Canned Fruit Juices During Storage After Opening.—Branion and Cameron found that the loss of ascorbic acid from fortified apple juice is greater than from tomato juice, tomatoes or grapefruit juice during storage in open containers either at room temperature or in a refrigerator. Loss of ascorbic acid from tomato juice, tomatoes and grapefruit juice under the same conditions was negligible for twenty-four hours' storage and was small up to forty-eight hours, particularly during storage in the refrigerator.

Canadian Medical Association Journal, Montreal

57:1-94 (July) 1947

Clinical Depressions. G. L. Adamson.—p. 1.
Stuttering: Problem and Physician's Responsibility. W. R. Love.—p. 4.
Hiatus Hernias: (New Method of Demonstrating Hiatus Hernias Radiologically). J. Bloom.—p. 9.
Esophageal Hiatus Hernia. J. G. Stapleton.—p. 13.
Ankylosing (Marie-Strümpell) Spondylitis (An Analysis of 100 Cases). W. Graham and M. A. Ogryzlo.—p. 16.
Apical Lung Tumors. P. H. Malcolmson.—p. 21.
Effect of Amino Acids on Gastric Acidity. J. Feller and C. J. Tidmarsh.—p. 23.
Papaverine in Treatment of Neurotic Symptoms. J. S. Tyhurst.—p. 25.
Nutritional Disturbances and Oral Use of Amino Acids in Infants. M. Langlois.—p. 31.
Interpretation and Significance of False Positive Serologic Reactions for Syphilis. H. H. Lubinski.—p. 33.
Influenzal Meningitis: Report of 3 Nonfatal Cases. D. Magner, H. Wood and Marion M. Coakwell.—p. 35.
*Backache and Fibrositis: Medical Point of View. W. R. Caven.—p. 37.
*March Hemoglobinuria. A. M. Bell.—p. 43.
Surgery of the Sympathetic System. U. Gariepy.—p. 47.
Simplified Plan of Prescribing for Adult Diabetes. D. M. Baltzan.—p. 54.

Backache and Fibrositis.—According to Caven, fibrositis is the name given to a condition that produces in certain susceptible individuals small nodules in the connective tissue; these are sometimes painful or may give rise to referred pain or may be only tender to the touch. It is probably the most common cause of pain in the large group of individuals who suffer from so-called rheumatic conditions. Some authors speak of fibrositic nodules and others, mostly English, of rheumatic nodules. In the English literature fibrositis is usually grouped with rheumatic conditions, in which are also included various types of arthritis. The author thinks that fibrositis should be kept separate from these conditions, as there is no evidence of infection. The predisposing causes have been listed as sudden strain, wear and tear, chill, worry, poor posture and lack of use of certain groups of muscles. The essential pathology of fibrositis is now well known, as Stockman has described the changes in the white fibrous tissue of the muscles, nerves and fascia as being due to edema with serofibrinous exudation; in this the fibroblasts proliferate rapidly, numerous minute new blood vessels appear and the whole forms a soft, ill defined, congested little swelling. The author regards fibrositis as one of the most common causes of backache and of pains referred to the back. Along with fibrositis there usually exists some muscle spasm. Physical therapy is most important in the treatment. In the acute case with sudden onset, heat and rest with the use of analgesic drugs may be necessary for the first few days before massage can be used. In the more chronic cases manipulation and deep massage can be used from the start. The essential part of treatment is to stretch the tissues involved, by some means or other, either by traction when that is possible or by firm massage directly on the tender nodules. Before any manipulative treatment is undertaken it is wise to have x-ray films made of the spine to rule out abnormal bone conditions. The author describes manipulations to be carried out by the physician and exercises to be done by the patient.

March Hemoglobinuria.—Bell defines march hemoglobinuria as the condition in which free hemoglobin appears in the urine during and after erect exercise, such as running and marching. This hemoglobinuria is preceded by an elevation above normal of the free hemoglobin in the blood. A youth aged 18, who exhibited the syndrome of march hemoglobinuria for almost three months, was under observation during the last two. The history, negative Wassermann reaction and inability to produce a paroxysm when exposed to chilling, as well as the remission, ruled out any other type of paroxysmal hemoglobinuria. The presence of food in the upper digestive tract as long as three hours after its ingestion was a factor in the development of the paroxysms. When the upper digestive tract was empty, that is, seven or more hours after a meal, erect exercise did not precipitate symptoms. Erect exercise caused the appearance or the increase of albuminuria at all times. No theory can be formulated to explain why an apparently normal young man should suddenly exhibit for three months hemoglobinemia, hemoglobinuria, albuminuria and abdominal distress after walking for thirty minutes. Nor can any explanation account for the fact that for at least part of the three months the appearance of these symptoms depended on the presence of food in the upper digestive tract.

Connecticut State Medical Journal, Hartford

11:425-498 (June) 1947

Convocation of the Society, 155th Annual Meeting, Address of the Retiring President, Cole B. Gibson.—p. 427.
Newer Therapy for Epilepsy. Margaret Lennox.—p. 432.
Physiologic Reaction to Radioactive Isotopes. S. Warren.—p. 434.
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Malaria Complicating Appendicitis: Case Report. J. C. Woodward.—p. 438.
Cancer of Face: Remarks on Present Day Treatment.—p. 439.
Doctors Have Added Responsibilities. V. P. Hippolitus.—p. 442.
Connecticut and the Founding of the American Medical Association. S. B. Weld.—p. 445.

Delaware State Medical Journal, Wilmington

19:77-108 (May) 1947

Governor Bacon Health Center at Delaware City: New Approach for Rehabilitation of Children and Adults. M. A. Tarumianz.—p. 77.
Role of Emotions in Disease. F. M. Harrison.—p. 79.
Observations on Importance of Time in Etiology of Psychopathology. E. J. Koch.—p. 84.
Trends in Mental Hygiene. J. A. Doering.—p. 87.
Reflex Tremor: Special Form of Reflex Dyskinesia. G. J. Gordon.—p. 90.
Homosexual Prostitution: Case Report.—p. 92.
Group Psychotherapy: Aid to Diagnosis and Treatment. W. C. Adamson.—p. 94.
Objective Measurement of Reality Perceptions in Dementia Precox. J. Jastak and E. Stubbs.—p. 98.

Journal of Clinical Investigation, Boston

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Factors Concerned in Circulatory Failure of Adrenal Insufficiency. A. P. W. Clarke, R. A. Cleghorn, J. K. W. Ferguson and J. L. A. Fowler.—p. 359.
Effect of Blood Protease and Trypsin Inhibitor on Clotting Mechanism. A. J. Glazko.—p. 364.
Study of Distribution and Fate of Antimony When Used as Tartar Emetic and Fuadin in Treatment of American Soldiers with Schistosomiasis Japonica. S. W. Lippincott, L. D. Ellerbrook, M. Rhees and P. Mason.—p. 370.
Penicillin Resistant Staphylococci: Mechanisms Involved in Development of Resistance. W. W. Spink and Viola Ferris.—p. 379.
Physiologic Action of Clostridium Welchi (Type A) Toxins in Dogs. P. C. Zamecnik, I. T. Nathanson and J. C. Aub.—p. 394.
*Serologic Studies on Influenza During a Nine Month Period. S. S. Kalter and O. D. Chapman with the technical assistance of Catherine Burkhart.—p. 420.
*Comparative Action of Acetyl-Beta-Methyl Choline and Histamine on Respiratory Tract in Normals, Patients with Hay Fever and Patients with Bronchial Asthma. J. J. Curry.—p. 430.
Effect of Orally and Intravenously Administered Amino Acid Mixtures on Voluntary Food Consumption in Normal Men. C. J. Smyth, A. G. Lasichak and S. Levey.—p. 439.
*Minimum Dosage of Thiourea, Given Together with Iodine Medication, Necessary for Production and Maintenance of a Remission in Hyperthyroidism. A. W. Winkler, E. B. Man and T. S. Danowski.—p. 446.
Studies on Gangrene Following Cold Injury. J. M. Crismon and F. A. Fuhrman.—p. 468.
Studies of Thermal Injury. R. McLean, A. R. Moritz and A. Roose.—p. 497.
Studies of Breathing, Pulmonary Ventilation and Subjective Awareness of Shortness of Breath (Dyspnea) in Neurocirculatory Asthenia, Effort Syndrome, Anxiety Neurosis. M. E. Cohen and P. D. White.—p. 520.
Traumatic Shock. A. M. Seligman, H. A. Frank and J. Fine.—p. 530.
Studies of Congenital Heart Disease. L. Dexter, F. W. Haynes, C. S. Burwell, E. C. Eppinger, R. E. Seibel and J. M. Evans.—p. 547.
Bacteriologic Study of Factors Affecting the Efficacy of Streptomycin Therapy of Urinary Tract Infections. G. T. Harrell, E. G. Herndon Jr., C. M. Gilikin and J. K. Aikawa.—p. 577.

Serologic Studies on Influenza.—Studies described by Kalter and Chapman were designed to ascertain the approximate time of the appearance of epidemics or an indication of their approach by preepidemic increases in serum antibodies, to determine the nature of the epidemic in this area, to determine the effect of vaccination and to determine what antibody titers may be expected in presumably normal persons. The epidemic in the area studied was due to influenza B. This virus was present for several months before the actual outbreak. Recognition of the preepidemic period makes it possible to employ the vaccines early enough. Vaccination results in an antibody increase lasting in most cases for at least five months. Vaccines should then be administered in the fall of the year in order to prevent infection. Serologic studies are of value in (*a*) determining the etiologic agent, (*b*) ascertaining the duration of antibody titers and (*c*) estimating the approximate time for administration of vaccines. These tests may be used by the laboratory to ascertain the etiology of this type of respiratory infection.

Comparative Action of Mecholyl Chloride and Histamine.—The reaction of the tracheobronchial tree, measured chiefly by changes in the vital capacity, to mecholyl chloride administered intramuscularly in doses of 0.25 to 6.0 mg. was determined by Curry in 10 normal subjects, 11 patients with uncomplicated hay fever and 27 patients with active bronchial asthma or a history of asthmatic attacks. In the latter two groups the reaction was compared with that due to parenteral histamine administered chiefly by the intravenous route in doses of 0.02 to 0.04 mg. of the base. In the normal group 3 subjects had a slight reduction in vital capacity after the intramuscular injection of 6 mg. of mecholyl chloride, though all noted a feeling of tightness in the chest. All the patients with hay fever had a slight reduction in vital capacity following the administration of 6 mg. of mecholyl chloride intramuscularly, and in 7 cases the reduction was 5 per cent or greater. By contrast, in the latter group the intravenous administration of 0.02 to 0.03 mg. of histamine base caused a reduction in vital capacity in 6 of 11 subjects, but in only 2 cases was the decrease 5 per cent or greater. In the 27 subjects with bronchial asthma all had a reduction in vital capacity after the intramuscular injection of from 1 to 6 mg. of mecholyl and in only 1 instance was the decrease less than 5 per. cent. On the other hand, following the administration of parenteral histamine, 23 subjects had a reduction in vital capacity, and in 22 of these cases the reduction was 5 per cent or greater. It appeared that patients with hay fever and asthmatic subjects were more reactive to mecholyl chloride than to histamine and that both drugs acted by different mechanisms on the hyperresponsive respiratory tract of these persons.

Thiourea Plus Iodine in Hyperthyroidism.—According to Winkler and his associates the thyroid depressant effect is enhanced if thiourea is used in combination with strong solution of iodine. He cites facts which suggest that the dosage initially employed was unnecessarily large. The present study arose from an attempt to avoid hypothyroidism by the use of the minimimum effective dose of thiourea. Effects of small doses of thiourea, 0.075 to 0.015 Gm. daily, together with iodine solution in inducing and maintaining a remission in hyperthyroidism were studied. Doses of thiourea as small as 0.07 Gm. daily, in conjunction with iodine solution, produced a remission in hyperthyroidism with considerable regularity. The remission in hyperthyroidism can usually be maintained by the use of 0.05 to 0.025 Gm. of thiourea daily in addition to iodine solution. Withdrawal of thiourea, even when the maintenance dose is as low as 0.025 Gm., is frequently followed by exacerbation of previously controlled hyperthroidism. Control of hyperthyroidism with iodine solution alone is only rarely possible, with or without previous thiourea treatment. Prolonged, and perhaps indefinite, maintenance on thiourea and iodine is necessary to prevent recrudescence of hyperthyroidism.

Journal of Pediatrics, St. Louis

30:645-768 (June) 1947

Clinical Use of Hyaluronidase in Hypodermoclysis. O. Hechter, S. K. Dopkeen and M. H. Yudell.—p. 645.
*Lung Calcifications and Histoplasmin-Tuberculin Skin Sensitivity. L. W. Sontag and J. E. Allen.—p. 657.
Cephalin-Cholesterol Flocculation in Premature Infants and Children Receiving Immune Globulin. G. E. Prince.—p. 668.
Measuring the Specific Gravity of Small Amounts of Urine: Rapid and Simple Method. I. Dogramaci.—p. 672.
Relationship of Weight and Length of Infants at Birth to Age at Which They Begin to Walk Alone. Mildred A. Norval.—p. 676.
Atresia of Ileum: First Successful Case Cured by Enterostomy Alone. J. R. Judd.—p. 679.
*Sexual Precocity and Accelerated Growth in Child with Follicular Cyst of Ovary. G. C. Kimmel.—p. 686.
Congenital Thrombocytopenic Purpura. Janet Talmadge and B. Berman. —p. 691.

Lung Calcification and Histoplasmin Tuberculin Skin Sensitivity.—Sontag and Allen report investigations of serial chest x-ray and histoplasmin-tuberculin sensitivity reactions in 170 essentially "normal" southwestern Ohio children. They applied haplosporangin and blastomycin skin tests to thirty-three children with positive calcification and negative skin reactions. They reemphasize the findings of other investigators that a far greater number of children are sensitive to histoplasmin than to tuberculin and that the incidence of pulmonary calcification is much more closely associated with the incidence of histoplasmin sensitivity than with tuberculin sensitivity. There is a much closer association between the onset of the calcification and the development of histoplasmin sensitivity than between calcification and the development of tuberculin sensitivity. A considerable number of calcifications occur in children negative to both histoplasmin and tuberculin. One of these was associated with a positive blastomycin test and one with positive haplosporangin plus a positive blastomycin test. In this series there is a tendency for familial distribution of positive lung calcifications, but not of positive histoplasmin skin reactions. The majority of the calcifications in this study have their soft tissue changes before 48 months of age. Many of these can be traced back to the early months of life. Infiltrates and occasional round areas of consolidation are the precursors of the calcifications in the parenchyma. Progressively appearing new lesions followed by new calcifications both in parenchyma and in hilus are often seen in histoplasmin positive children over a period of several years.

Sexual Precocity and Accelerated Growth of Child with Follicular Cyst.—Kimmel observed a girl aged 25 months in whom the presenting complaint was vaginal bleeding. There was hypertrophy of the breasts and nipples, with quite prominent pigmentation about the nipples. The labia minora were moderately enlarged. Combined rectoabdominal examination revealed a moderately enlarged uterus. The child was very tall for her age, her height being 39½ inches (94 cm.), 5 inches (12.7 cm.) taller than the average. A tentative diagnosis of granulosa cell tumor of the ovary was made. At operation the right ovary was found to consist chiefly of a cyst 4 by 3 cm. in diameter, which had destroyed most of the ovarian tissue. A right salpingo-oophorectomy was performed. There was no evidence of a granulosa cell tumor, but it was assumed that sufficient estrogen to cause the changes noted might have been produced by granulosa cells which lined the cyst. It has now been four years and four months since the cyst was removed. The patient has been seen several times during this period. There has been no recurrence of vaginal bleeding, and the labia, uterus and breasts have regressed to normal size. A search of the literature revealed only 2 previously reported cases similar in some respects to the case reported here.

Journal of Urology, Baltimore

58:1-96 (July) 1947

*Biologic Assay of Human Kidney Tumors by Means of Heterologous Ocular Transplantations: Study of Clear Cell Carcinoma, Granular Cell Carcinoma and Papilliferous Epithelioma of Kidney. M. H. Masina.—p. 1.
Malignancy of Kidney, Survey of 195 Cases. A. P. Graham.—p. 10.
Ureteral Anastomosis: Experimental Studies: Preliminary Report. A. Davalos.—p. 22.
*Solution of Vesical Calculi. D. J. Abramson.—p. 29.
*Streptomycin in Successful Treatment of Tuberculosis of Urinary Bladder: Report of 2 Cases. F. H. Redewill.—p. 35.
Oliguria Following Transurethral Resection of the Prostate Gland. W. L. McLaughlin, J. B. Holyoke and J. P. Bowler.—p. 47.
Radical Perineal Prostatectomy for Carcinoma. J. K. Ormond.—p. 61.
Use of Bladder Mucosa in a One Stage Repair of Hypospadias. J. Memmelaar.—p. 68.
One Stage Operation for Correction of Mild Hypospadias with Chordee. A. Nahoum.—p. 74.
Method of Meatotomy. O. Grant and R. Lich Jr.—p. 77.
Sulfadiazine: Effect on Spermatogenesis and Excretion in Ejaculate. R. S. Osenkop and J. MacLeod.—p. 80.
Improved Method for Semen Analysis. E. J. Farris.—p. 85.
Simple Method for Determination of Serum Acid Phosphatase. P. B. Hudson, H. Brendler and W. W. Scott.—p. 89.

Biologic Assay of Human Kidney Tumors by Heterologous Ocular Transplantation.—This investigation by Masina is an attempt at biologic assay of some of the tumors of the human kidney encountered by the urologist. Studies were made on 1 papilliferous epithelioma of the renal pelvis from a man aged 37, 1 clear cell carcinoma from a woman aged 61, and 1 granular cell carcinoma from a man aged 60. The specimens for transplantation were obtained in the operating room, were transported to the laboratory under sterile precautions and immediately transplanted into the anterior chamber of the eyes of a series of male and female guinea pigs. These three different types of tumors display in heterologous ocular transplantation activities of their cells which may greatly modify previous concepts concerning the evaluation of the degree of malignancy solely in terms of morphology of the tumor cells. It was disclosed that the relatively benign papilliferous epithelioma can be heterologously maintained, whereas the highly malignant granular type gave negative results, a feature which was unexpected. The cytologic evidence of transition of clear cell type toward granular cell variety suggests that the clear cell carcinoma may be a precursor of the granular cell, and the formation of granules in the clear cells may possess some endocrine function that may initiate in the patient a chain of interrelated biologic phenomena responsible for the clinicopathologic manifestations displayed by the granular cell carcinoma of the kidney in the human subject, a sequence which is not initiated in the guinea pig. The absence of this sequence may be responsible for negative results with the transplantation of the granular cell carcinoma, as also for the absence of metastases throughout the series.

Solution of Vesical Calculi.—Abramson reports that the bladder calculi of 7 patients detected among 35 paraplegic patients responded by disintegration to irrigations with solution G. The time necessary to dissolve the bladder calculi ranged from six to forty-four days, the average being fourteen days. The method of treatment is outlined.

Streptomycin in Treatment of Tuberculosis of Urinary Bladder.—Redewill reports that 2 patients with tuberculosis of the urinary bladder responded to treatment with streptomycin. The development of bacterial resistance to streptomycin can be avoided by administering parenterally no less than 800,000 units of the drug in eight doses three hours apart each twenty-four hours. It was also found that streptomycin will check the tendency of tubercle bacilli developing increased resistance if penicillin is administered along with streptomycin. Penicillin alone has no demonstrable effect on tubercle bacilli, but when given with streptomycin, it enhances the bacteriostatic effect. The first of the 2 patients was started on 100,000 units of penicillin in beeswax and peanut oil daily by injection and sulfathiazole by mouth. Streptomycin was administered both parenterally (800,000 units daily) and by bladder iontophoresis twice a week. After six weeks of treatment the bladder was normal and the patient was declared apparently cured. The follow-up disclosed no recurrence of bladder symptoms. In the second patient cystitis and ulceration cleared in eight weeks. This patient also had incipient tuberculosis of the right kidney and involvement of the left seminal vesicle and epididymis, all of which apparently cleared under streptomycin treatment. Treatment with quartz light is an important adjunct. Redewill describes a modification of the Caulk intravesical application of ultraviolet light.

New York State Journal of Medicine, New York

47:1313-1438 (June 15) 1947

*Clinical Use of Products of Human Plasma Fractionation. C. A. Janeway.—p. 1357.
Use of Tridione in Treatment of Convulsive Disorders. D. J. Simons. —p. 1363.
Sclerosing Therapy of Varicose Veins with Sotradecol (Sodium Tetradecyl Sulfate). S. R. Hirschman.—p. 1367.
*Androgenic Arrest of Familial Enuresis: Study in 75 Children. I. N. Kugelmass.—p. 1369.
*Ocular Findings in 128 Juvenile Diabetics. I. Givner and Catherine Lodyjensky.—p. 1371.
Experiences in Infant Feeding with Administration of Cereal Containing Papaya Fruit. Elizabeth J. Ittner.—p. 1373.
Attempt to Unify Current Theories of Renal Lithiasis. R. U. Whipple. —p. 1375.
Sensory Polyneuritis: Common Postgrippal Syndrome. E. Hollander. —p. 1378.
Anemia in Indigent Blood Donors. I. S. Eskwith and R. S. Kroll. —p. 1380.
Evaluation of Anginal Pain in Various Stages of Coronary Artery Disease, Particularly the Premonitory Phase of Coronary Occlusion and Infarction Without Occlusion. H. L. Jaffe, H. Halprin and L. M. Nelson.—p. 1383.

Products of Plasma Fractionation.—Janeway shows that separation of blood into its functional components makes it possible to accomplish many therapeutic purposes. For instance, if the plasma from 8 pints is fractionated, there is obtained two 25 Gm. bottles of albumin, several packages of blood grouping globulins, twelve 5 cc. vials of gamma globulin, several packages of fibrin foam and film, an excess of thrombin and ultimately, it is hoped, a number of other useful products. In addition, important tools have been secured for the study of disease. It has been possible to do things which could not be done with whole blood. By giving albumin it is possible to raise the patient's serum albumin level and by that means we have learned a lot about the control of water balance in liver disease and we are learning something about nephrosis, in which albumin is probably not the answer to the problem. The problem arises as to how these agents are to be secured. They were developed for the army and navy but not for civilian use, although certain surplus products, dried plasma and gamma globulin are being distributed by the Red Cross. In Massachusetts and Michigan the Red Cross is cooperating in getting donors. Blood is collected by the states and is processed in the states' own laboratories. It is planned to distribute whole blood, resuspended red cells, plasma, albumin, gamma globulin and the whole range of blood derivatives at public expense. It is to be hoped that programs will be developed in different parts of the country, each best suited to the facilities and needs of the area.

Androgenic Arrest of Familial Enuresis.—Kugelmass studied 75 children with familial enuresis with and without emotional and training difficulties because they failed on all forms of therapy. Boys predominated in this group (3 to 1) probably because of their greater difficulty in learning bladder control. Treatment consisted in the administration of methyl testosterone 10 to 30 mg. daily in divided doses for one to three months. If oral administration produced no significant improvement within a fortnight, it was supplemented with intramuscular administration weekly of 10 mg. of testosterone propionate. Fluid intake was restricted except for milk morning and noon, cracked ice between meals, and rinsing of the mouth with water to quench thirst. Mothers were advised to remain unemotional about wetting episodes, because parental anxiety has an untoward influence on the child's psyche. Fifty-nine children were cured, 10 were improved and 6 failed to benefit from this treatment.

Ocular Findings in Diabetic Children.—In routine fundoscopy of 128 diabetic children, Givner and Lodyjensky found 3 who had retinal hemorrhages and 1 a diabetic cataract. Since none of the patients had complaints referable to vision, and since the importance of retinal hemorrhages in regard to a better evaluation of the case has been emphasized, it would seem good practice to study every diabetic patient under a mydriatic. Special emphasis should be put on pinpoint hemorrhages and aneurysmal capillary dilatations, as they can be overlooked easily.

Texas State Journal of Medicine, Fort Worth

43:163-238 (July) 1947

Some Problems in Field of Medical Economics. H. H. Shoulders. —p. 168.
Clinical Indications for Streptomycin Based on U. S. Army Experiences. E. J. Pulaski.—p. 174.
Problem of Chagas' Disease in Texas. A. Packchanian.—p. 179.
*Early Ambulation of Postoperative Cataract Patients. S. C. Smith. —p. 183.
Mild Hypothyroidism in Children. S. R. Kaliski.—p. 186.

Early Ambulation After Cataract Operation.—Smith says that although the early ambulation of postoperative cataract patients is a departure from the conventional, this procedure was carried out on a series of 60 nonselected patients during 1946 with results comparable to those obtained with prolonged bed rest and quiet. In all these cases a monocular dressing was applied immediately after surgery, and the patients were allowed out of bed in from sixteen to twenty hours later. The nursing problem was practically nil. The patients for the most part looked after themselves, and because of the monocular dressing the hysterical problem sometimes seen was not encountered. The fact that no iris prolapses ensued and that the anterior chamber quickly reformed, and for the most part stayed reformed, may be attributed to the high conjunctional flap and the excellent coaptation of the limbal wound obtained by the Daily scleral conjunctival technic.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Annals of Rheumatic Diseases, London

6:1-64 (March) 1947

X-Ray Appearances in Chronic Rheumatism. G. D. Steven.—p. 1.
*Intestinal Extract in Rheumatic Diseases. A. Renshaw.—p. 15.
Psychosomatic Nonarticular Rheumatism. E. P. Edmonds.—p. 36.

Intestinal Extract in Rheumatic Diseases. — Renshaw found in postmortem examinations that atrophy of the small intestine was often severe in patients with rheumatic disorders. He decided to test the effect of extract of intestinal mucosa. Enzyme specialists agreed to prepare an extract of intestinal mucosa rich in erepsin. The resulting product was presented in enteric coated capsules for oral administration. These were designed to release their contents one hour after being swallowed. Since the hydrochloric acid of the gastric juice would inactivate the enzymes, an interval of two and a half hours after food seemed to be the optimal time for administration; this would allow the intact capsule to pass into the duodenum, there to dissolve and liberate its contents for subsequent action in an alkaline medium. Treatment of patients with this extract have now been proceeding for seven years. Most types of rheumatic disease have been treated—rheumatoid arthritis, osteoarthritis, fibrositis, synovitis, intermittent hydrarthrosis, acute and subacute rheumatism and spondylitis. Among over 700 cases treated by the writer personally, good results have been obtained in rheumatoid arthritis, osteoarthritis and fibrositis. Also some intractable cases of ankylosing spondylitis and Still's disease have responded to this therapy. The beneficial effects observed as a result of the administration of the intestinal extract in various rheumatic conditions would appear to indicate a common factor underlying all and to support the idea of a rheumatic diathesis. This rheumatic diathesis may be a constitutional state of the tissues, inherited or acquired, as a result of which such tissues are more vulnerable to the action of toxins, bacterial invasion or trauma, and the ill effects of which are further aggravated by defects in intestinal digestion and assimilation.

British Journal of Radiology, London

20:261-300 (July) 1947

Radiotherapist and Cancer Patient (Presidential Address). D. W. Smithers.—p. 261.
Symposium: Radiation Necrosis. A. H. McIndoe, R. Forbes and B. W. Windeyer.—p. 269.
Radiation Doses Received by Skin of Patient During Routine Diagnostic X-Ray Examinations. J. H. Martin.—p. 279.
Two Diagrams for Computation of Dosage Rates from Linear Radium Sources. F. Bush.—p. 284.
Early Radiologic Diagnosis of Ankylosing Spondylitis. G. L. Rolleston.—p. 288.

British Medical Journal, London

1:913-958 (June 28) 1947

Recent Advances in Physiology of Vision: Part II. H. Hartridge.—p. 913.
Complete Removal of Prostate: Preliminary Communication. H. S. Souttar.—p. 917.
*New Euphoriant for Depressive Mental States. G. T. Stockings.—p. 918.
Type I Triple Cardiac Rhythm in Normal Hearts: Study of 1,360 Naval Recruits and Personnel. P. J. O'Meara.—p. 923.
Severe Erythema Multiforme. I. B. Sneddon.—p. 925.

New Euphoriant for Depressive Mental States.—Stockings believes that the syndrome of thalamic dysfunction, or neurotic depression, is frequently encountered in general practice and is often one of the most intractable. The commonest forms of the condition are the chronic neurotic depressions, anxiety states, reactive and hysterical depressions, and obsessional disorders. The depressions of later life, in which the dysphoria is unaccompanied by hallucinosis, delusions and other gross psychotic symptoms may also be included in this group. The essential feature of these disorders is that the perception threshold for unpleasant affects and sensory impressions is lowered, while that for pleasant sensation is correspondingly raised—the anhedonic or dysphoric syndrome. Although it is generally believed that these conditions are psychogenic in origin, there is evidence that the basis of the condition is primarily a disturbance of the thalamic-hypothalamic mechanisms, possibly a metabolic disorder. During the last century attempts were made to utilize the euphorigenic properties of cannabis in the treatment of depressive states, but these were found to be unsatisfactory. The discovery of the new synthetic cannabis-like derivatives of the dibenzopyran class has given new types of euphoriant drugs. One of the most active pharmacologically is the synthetic hexyl analogue called synhexyl, pyrahexyl or parahexyl. The drug was given to 50 patients showing the thalamic dysfunction syndrome. The dosage employed varied from 15 to 90 mg., the drug being administered on rising in the morning. Thirty-six showed improvement, while 14 were unaffected or made worse. Of the 6 illustrative cases, 4 were dysoxic (psychotic-depressive) and 2 were examples of simple thalamic dysfunction (neurotic depression).

Lancet, London

1:895-934 (June 28) 1947

Progress and Present Aspects of Medical Science. L. Whitby.—p. 895.
*Nitrogen Mustards in Hodgkin's Disease: Report on 21 Cases and 4 of Other Reticuloses. M. I. R. ApThomas and H. Cullumbine.—p. 899.
Glycosuria in Recruits: Incidence and Classification. Joyce A. Keeping and R. D. Lawrence.—p. 901.
Laboratory Diagnosis of Intestinal Amebiasis. K. R. Hill.—p. 903.
Intrapleural Hemorrhage Following Artificial Pneumothorax Refills. A. K. Miller and L. R. J. Rinkel.—p. 906.
Penicillin in Surgical Treatment of Pasteurella Sinusitis. Eileen O. Bartley and K. Hunter.—p. 908.
Survival of Baby Weighing 24 Ounces at Birth. J. P. Bush.—p. 909.
Plasmacytoma of Pancreas and Duodenum Causing Acute Intestinal Obstruction. Angela Hefferman.—p. 910.

Nitrogen Mustards in Hodgkin's Disease.—ApThomas and Cullumbine say that the effects produced by nitrogen mustards in animals are similar to those caused by x-rays and that for this reason it was assumed that they might prove useful in the treatment of malignant disease. Reports by American authors induced them to try nitrogen mustards in treating 25 patients, 21 of whom had Hodgkin's disease in an advanced stage, some recurrent after radiotherapy, and 4 had other reticuloses. The diagnosis in all cases was confirmed by biopsy. On the basis of the results obtained the authors conclude that the nitrogen mustards are useful in the palliative treatment of extensive Hodgkin's disease, the manifestations of which are consistently diminished. The symptoms can still be alleviated by nitrogen mustard in cases in which radiotherapy has been abandoned. Leukopenia seems to be the limiting factor as far as dosage is concerned. The tris form of the drug has shown no better results than has the bis compound. Diminution of leukocytes and of platelets is more severe after the tris form. Radiotherapy is to be preferred as a first treatment in Hodgkin's disease; for, though the improvement with x-rays is slower, it is maintained longer and the side effects are less serious.

Medical Journal of Australia, Sidney

1:745-772 (June 21) 1947. **Partial Index**

Histamine and Phosgene Poisoning. E. R. Trethewie.—p. 746.
*Incidence of Tuberculous Infection in Male Medical Students in Melbourne: Preliminary Report. T. E. Lowe and K. H. Hallam.—p. 749.
*Tuberculosis Infection in Nurses. D. Anderson.—p. 752.
Victoria's Tuberculosis Problem. H. M. James.—p. 754.

Incidence of Tuberculosis in Male Medical Students.—Lowe and Hallam report a survey to determine the incidence of skin sensitivity to tuberculin and the incidence of active pulmonary tuberculosis in medical students. No difference in the proportion of positive skin reactors is found between medical students in the preclinical years and the general university population of the same age. A significant increase in the proportion of positive skin reactors is seen in medical students at the end of their clinical years. No case of active pulmonary tuberculosis was found among medical students in their preclinical years, but an incidence at least four times as high as that in the general population occurred among these students during their clinical years.

Tuberculosis in Nurses.—Anderson applied the intracutaneous tuberculin test to nurses at eleven hospitals of the New South Wales. He was able to report the reactions in 2,705 nurses. Tables and graphs indicate that the rate of infection is greater in nurses than in other young women. It may be inferred that the nursing of tuberculous patients in the general hospital in special wards pays good dividends in the protection of nurses from infection. Removal of tuberculous patients from the general wards was followed by a lessening of the frequency with which nurses became infected during their training.

Proceedings of Royal Society of Medicine, London

40:419-484 (June) 1947

Isolated Oculomotor Palsy Caused by Intracranial Aneurysm. G. Jefferson.—p. 419.
Rheumatic Diseases: Challenge and Opportunity. H. Cohen.—p. 443.
Clinical Science in Light of History. A. P. Cawadias.—p. 543.

Nordisk Medicin, Gothenburg

34:951-1014 (April 25) 1947

*Causes of Hemoptysis. A. Aanonsen.—p 951.

Hospitalstidende

Phenylpyruvic Oligophrenia. Frida Lassen —p 955

Hygiea

Changes in Electrocardiogram During Sleep and in Fatigue. B. Bjerner and O. Steinwall.—p. 967.
Development, Diagnosis and Treatment of Anal and Rectal Atresia. E. Landelius and O. Morales.—p. 972

Svenska Läkaresällskapets Förhandlingar

*Eczema in Infants from Pediatric and Dermatologic Points of View. A. Wallgren.—p. 976.
Modern Analyses of Blood Proteins. B. Olhagen.—p. 992.

Causes of Hemoptysis.—Aanonsen reports that in 112 out of 275 patients from Ullevål Hospital admitted on the diagnosis of hemoptysis the cause was pulmonary tuberculosis; 88 had active tuberculosis, and in 33 of these the hemoptysis had led the patient to seek medical attention. Among the 153 patients without evidence of tuberculosis there was pulmonary tumor in 4, certain bronchiectasis in 40 and probable bronchiectasis in 27, bronchitis circumscripta nonspecifica (Leegaard) in 9, pulmonary infarct in 12 and bleeding from the throat in 12. In 22 no certain cause of the hemoptysis could be found

Eczema in Infants from Pediatric and Dermatologic Points of View.—Wallgren states that eczema in infants is an expression of a constitutional anomaly on a hereditary basis. The eczema usually appears at about 3 months and disappears before the age of 2 or 3. The cause of the manifestation as well as exacerbation is often acute infection or mechanical, thermal or chemical irritation of the skin. Hypersensitivity to certain foods does not as a rule seem to be significant, and diet plays a subordinate role in treatment; only in exceptional cases does elimination of certain aliments lead to definite improvement. Of greater value are partly the elimination of acute infections and cutaneous irritations of various kinds and partly local dermatologic treatment.

34:1015-1080 (May 2) 1947. Partial Index

*Significance of "Histamine Antagonists" in Treatment of Allergic Diseases. P. Kallós.—p. 1015.

Hospitalstidende

*Effect of 2-Phenyl-Benzyl-Aminomethyl-Imidazolin in Allergic Diseases. A. P. Skouby.—p. 1022.
Twelve Cases of Grave Barbituric Acid Intoxication Treated with Picrotoxin. Ingrid Gilg.—p. 1025.
Pancreatic Fistulas. O. Riisfeldt.—p. 1029.

Finska Läkaresällskapets Handlingar

Oculostatic Syndrome. O. Parland.—p. 1044.

Norsk Magasin for Lægevidenskapen

Necrobiosis Lipoidica. K. Rørvik.—p. 1051.
Aleukemic Paramyeloblast Leukemia: Case with Unusual Symptomatology. O. Selvaag.—p. 1054.
Gonorrheal Complications Originated During Treatment with Penicillin. O. Selvaag.—p. 1056.

Hygiea

*Clinical Picture of Retrobulbar Neuritis in Intracranial Tumors. S. Larssen and B. Nord.—p. 1059.

Significance of "Histamine Antagonists" in Treatment of Allergic Disease.—Kallós concludes that antasten (2-phenyl-benzyl-aminomethyl-imidazolin), a histamine antagonist not employed in the United States, is valuable in the symptomatic treatment of urticaria, angioneurotic edema, neurodermatitis, serum sickness or exanthem due to drugs, Ménière's disease and certain forms of headache, but without effect in the treatment of migraine or asthma. The general reactions which occasionally appear on specific desensitization can probably to some extent be influenced by antasten. Its toxicity is slight and it may be given orally, injected intramuscularly or intravenously and be applied directly to the mucous membrane (eyes, nose). There is no indication that histamine antagonists affect the antigen-antibody reaction and the cell injury it causes.

Effect of 2-Phenyl-Benzyl-Aminomethyl-Imidazolin in Allergic Disease.—Use of this preparation in the treatment of 43 outpatients with vasomotor rhinitis, angioneurotic edema, urticaria and asthma, Skouby says, gave good results in the first three groups and was without effect in the fourth group. By-effects, seen in 13 patients, persisted in only 7 on the necessary maintenance dose. In 2 instances treatment was discontinued because the discomforts from it were more annoying than the symptoms. The majority of patients with urticaria were women and in several cases the symptoms were aggravated in connection with the menses, which suggests that the disorder may have an endocrine basis.

Clinical Picture of Retrobulbar Neuritis in Intracranial Tumors.—Larssen and Nord warn that in cases of tumor in the anterior and middle fossa reduced vision and central scotoma with or without papilledema or atrophy of the optic nerve constitute an early symptom the diagnostic value of which is frequently not recognized. The symptom is often attributed to sclerosis disseminata, and surgical intervention is thus delayed. Especially in cases with a protracted course, encephalography is indicated. Eight personal cases, namely 2 of meningioma of the olfactory groove, 2 of suprasellar meningioma, 1 case of meningioma originating in the lesser wing of the sphenoid, 1 of adenoma of the hypophysis, 1 of hypophysial duct tumor and 1 of subfrontal meningioma, are described in detail. All presented diagnostic difficulties, and retrobulbar neuritis was prominent in all. Spontaneous improvement in vision suggested the erroneous diagnosis of sclerosis disseminata in the first 4 cases, 1 case was ascribed to anemia, 1 possibly to brain trauma, 1 to arteriosclerosis; in only 1 case was cerebral tumor diagnosed without preceding misconception.

Revue d'Hématologie, Paris

2:1-148 (No. 1) 1947. Partial Index

Hemolytic Intragroup Reaction to Transfusion Due to Not Yet Described Hemagglutinogen. A. S. Wiener and E. B. Sonn Gordon.—p. 3.
Letter to the Editor on Nomenclature Rh. A. S. Wiener.—p. 11.
*Experimental Research on Leukemias and on Tumors of Reticuloendothelial System. M. Guérin.—p. 13.
Hemopathy as Untoward Reaction. A. Tzanck and B. Dreyfus.—p. 37.

Leukemias and Tumors of Reticuloendothelial System.—Guérin's experiments on chickens, rats and mice at the Cancer Institute of the University of Paris revealed an intimate relationship between leukemia and tumor growth. This was demonstrated by the production of sarcoma in chickens by inoculation with various leukemic strains. A myeloma was produced in rats at the point of entrance of an injection of crushed liver and spleen from a rat with chloroleukemia. The cycle was completed by the appearance of a myeloid leukemia in the advanced stage of the tumor. The only difference between the leukemias or the tumors of the birds and of the mammals consists in the fact that in the first the determining agent may be isolated from the cell in virus form, while in the second it is intimately connected with the leukemic or neoplasmic cell and cannot be separated from it by filtration. Immune phenomena were demonstrated concerning the leukemia in chickens which suggest the use of serum therapy or vaccination as effective means of combating the disease. Definite recovery resulted in 7 of 10 chickens with virulent leukemia from intravenous injections of massive doses of 6 methoxy-8 diethylamino-n-propylamino-quinoline (rhodoquine). Crushed liver injections from mice with spontaneous reticuloendotheliosis were given to mice; a diffuse reticuloendotheliosis was produced in some of the animals, a pseudoleukemic granulomatosis in others and subcutaneous sarcomas in several animals. Two of these sarcomas were successfully [illegible] Leukemias or tumors of the [illegible] duced in chickens by painting [illegible]

Book Notices

Practical Anæsthetics for Students, Hospital Residents and Practitioners. By J. Ross Mackenzie, M.D., D.A., Senior Anæsthetist, Royal Infirmary, Aberdeen. With foreword by W. C. Wilson, M.B., Ch.B., F.R.C.S.E. Second edition. Fabrikoid. Price, $3. Pp. 172, with 71 illustrations. William Wood & Co., Mt. Royal & Guilford Aves., Baltimore 2, 1946.

The popularity of Mackenzie's book is indicated by the demand for a new edition less than two years after the printing of the first. The author has fulfilled a double object: to provide students, hospital residents and general practitioners with a guide to the administration of the most commonly used anesthetics, also to give a summary of the knowledge of anesthetics which every student should possess on graduation.

He describes the preparation and after-care of the patient and gives directions for administration of the commonly used anesthetics: ether, chloroform, ethyl chloride, intravenous pentothal and nitrous oxide with oxygen. He describes the necessary apparatus and the technic of administration of the gas anesthetic agents. He has chapters on endotracheal, on intravenous and on local and regional anesthesia, including the spinal and splanchnic technic, on anesthesia and analgesia in obstetrics, on the choice of the anesthetic agent, on complications and sequelae of anesthesia, and on anesthesia for some special operations.

Anesthetic practice in Scotland differs in some respects from ours. We find that susceptibility to anesthetic drugs varies with the metabolic rate rather than with the weight of the patient. We agree that the stomach should not contain solid food and that liquids may be taken up to a few hours before operation, but we find that a simple enema given on the evening before operation reduces the chance for postoperative nausea and vomiting. The author's list of thirty-three items of essential anesthetic equipment may be confusing to the beginner or the occasional anesthetist. We do not think that trichlorethylene has had sufficient trial to warrant its recommendation to the beginner.

The book has chapters on oxygen therapy, on medicolegal notes and on anesthetics today and tomorrow. It provides interesting reading, well illustrated.

Morell Mackenzie: The Story of a Victorian Tragedy. By R. Scott Stevenson. Cloth. Price, $5. Pp. 194, with illustrations. Henry Schuman, 20 E 70th St., New York 21, 1947.

This story of more than half a century ago has needed retelling. Beside the figure of Mackenzie, a leading otolaryngologist of his day, pass those of Germany's last kaiser, Emperor William II and his ill fated father; of Virchow, von Bergmann, Queen Victoria and her household, Bismarck and others.

The author is a laryngologist of standing in London. His former chief, Mr. Irwin Moore, had known Mackenzie and felt that he had been misunderstood and poorly treated. The author takes us to a remotely familiar time of leisurely and spacious living in an England proudly confirmed in her world leadership.

Morell Mackenzie's polished and cultured father was a general practitioner in a village 6 miles from London. The son was ambitious and his medical education was excellent. He attended the magnificent clinics on the continent and met Charcot, Nélaton, Trousseau, Bretanneau, Rokitansky, Skoda and Czermak, who had popularized the laryngeal mirror and so helped to establish modern laryngology. Mackenzie had great ability. In 1887 he was called in consultation to see Crown Prince Frederick of Germany. The prince had been seen only by German physicians; they had diagnosed carcinoma of the larynx and advised operation.

Mackenzie examined the crown prince and opposed operation until a biopsy could be made. The first and subsequent ones were pronounced negative for cancer by Virchow. Operation was postponed but later it became necessary to do a tracheotomy. The patient's father, the emperor, died in a few weeks. The crown prince ascended the throne to rule for about three months and then passed away, to be succeeded by his son, Kaiser William II, the last emperor of Germany.

There have been few medical cases about which there has been more debate, mystery, recrimination and hidden politics. Some said that Mackenzie was influenzed by British statesmen not to pronounce the crown prince a victim of incurable disease. It was in British interests that the prince succeed his father and make his wife, who was a British princess and the daughter of Queen Victoria, an empress. It is hard to believe that Mackenzie would lend himself to this sort of thing. Mackenzie, by present day standards, was correct in insisting on a biopsy. Virchow's negative report led to the delay which later made laryngectomy the only possible treatment. This operation in those days had a high mortality, and the patient refused to consider it. As for Mackenzie, possibly the best explanation of circumstances which led to his unhappiness was that the prince had a carcinoma low in the larynx, the so-called subglottic type, from which it was not possible to obtain a proper specimen. This was before the anesthetic properties of cocaine had been discovered and before laryngologists had our modern electrically lighted instruments.

This biography can be read with profit by any one interested in the politics and intrigues of a day not so long past.

Le problème biologique du cancer. Par Jacques Delarue, professeur agrégé à la Faculté de médecine de Paris, Paris. Préface de M. le recteur G. Roussy Paper. Price, 300 francs. Pp. 200, with 31 illustrations. Masson & Cie, 120 Boulevard Saint-Germain, Paris 6^e, 1947.

The first 140 pages of this monograph contain a summary of present knowledge of cancer from the clinical, experimental and public health points of view. This section mentions and discusses most of the important facts concerning cancer that have come out in the last few years, such as the work with carcinogens, hormones, heredity, the milk factor and transplantation into the eye. The author does not fully realize the advances in surgical technic that have been particularly striking in the United States in the last few years and his judgment as to the treatment is hampered by such ideas as "pneumonectomy and lobectomy are very dangerous operations."

The last 60 pages consist of a discussion of the causes of cancer, the causes of recurrence and the causes of metastases. This discussion starts with the theory that cancer arises as a result of chemical changes in the body as a whole and in the local area in particular. He believes strongly that when cancer arises at one point in a tissue it is also likely to arise at other points in the same tissue. This agrees fully with the studies of Shields Warren in this country, but the author apparently does not know of his work. He is on a sound basis in discussing recurrences in the local operative area. These, he believes, are due either to gross tissue left behind at an incomplete operation or to the development of a new cancer which we in the United States have been distinguished for some years as re-occurrence. His discussion of metastasis, however, is not so sound. He believes that metastases are not due to the transplantation of cancer cells to other parts of the body but to an influence either chemical, viral or neurogenic which causes a metaplasia of the cells in the neighborhood in which this influence works, the result of which is a local area of cancer identical or nearly identical in structure with the primary focus of cancer. Such theoretical material will undoubtedly leave many serious students of cancer cold.

The value of the book to students of cancer is reduced by its complete absence of a bibliography. The author quotes many authors by name in the text but does not mention the date of the particular work that he is quoting.

The Acute Infectious Fevers: An Introduction for Students and Practitioners. By Alexander Joe, D.S.C., M.D., F.R.C.P., Medical Superintendent, City Hospital, Edinburgh. Fabrikoid. Price, $4.50. Pp. 276, with 64 illustrations. Blakiston Co., 1012 Walnut St., Philadelphia 5, [n. d.]

In the preface it is stated that, "whilst it would be too much to expect that those with great experience of the subject would agree with all the views expressed, the latter at least ought to form a reasonable guide for the beginner until adequate observation has enabled him to form his own opinions." It seems strikingly apparent throughout the fifteen chapters comprising this volume that the foundations for beliefs are built of personal experience. Yet one cannot help but feel that the superb teachings of Ker have exerted a profound influence on the concepts in the text.

There is little discussion regarding individual patients or series of cases which are likely to be recorded in a contagious disease hospital and with which the medical superintendent would be familiar. Statistics are surprisingly few. For the most part the opinions expressed are sound and practically identical with those adhered to in fever hospitals elsewhere. In America, however, there are some who will not agree that a lumbar puncture "is necessary in cerebrospinal fever . . . for the relief of pressure." And for other conditions the use of poultices and mustard baths would be frowned on in most contagious disease hospitals of this country.

The best chapters are those which concern scarlet fever, diphtheria and smallpox. There is no bibliography, but the works of many authors are quoted, with the years in brackets. Though the great majority of these references extend back ten years or more, there is little to criticize on the ground of incompleteness. There is a chapter on puerperal sepsis and one on enteric fever, but no reference is made to poliomyelitis. Practically all of the other common contagious diseases are described.

The book is convenient in size. The various topics are set forth in a concise manner and follow closely opinions held by many who have made an extensive study of the acute infectious diseases. The volume should be helpful to the medical student but valued more highly by the resident and appreciated most by the experienced medical officer. There are a number of excellent photographs illustrative of such diseases as smallpox, scarlet fever and measles, also tables and numerous fever charts.

Chirurgie der Infektionen mit weitgehender Berücksichtigung der Behandlung. Von Prof. Dr. Rudolf Demel, Vorstand der II. Chirurgischen Abteilung der Krankenanstalt "Rudolfsstiftung" in Wien. Cloth. Price, $18. Pp. 659, with 181 illustrations. Grune & Stratton, Inc., 443 Fourth Ave., New York 16; Wilhelm Maudrich, Spitalgasse 1B, Wien IX/2, 1947.

The author points out in the preface that the surgeon must rely on his experience more when treating infectious processes than other conditions because the correct appraisal of the virulence of bacteria and the resistance of the invaded organism can be learned only from numerous observations. It is this experience that he tries to share with his readers.

The first part of the book deals with classification of infections, choice of anesthesia, preoperative treatment and postoperative care, while the second part is formed by description of surgical procedures in topographical order.

Perusal of the book detects numerous deviations from popular concepts and from the use of therapeutic measures in vogue in the United States. Regional ileitis is not mentioned. Newer sulfonamide compounds such as sulfathalidine and sulfasuxidine, also amino acids, dicumarol, heparin, menadione and absorbable sponges apparently are not being used by the author. Some methods are at distinct variance with those commonly used in the United States. One mg. (1/60 grain) of atropine preoperatively seems to be a rather large dose. In acute pancreatic necrosis the author recommends the drainage of the hepatic duct in preference to that of the gallbladder. To avoid tears during the removal of the drain, with the resulting fistula formation or cicatrical stenosis, the author uses a Nelaton catheter instead of a T tube for the drainage of the common duct. No distinction is made between thrombophlebitis and phlebothrombosis. For some obscure reason gastric resection and gastroenterostomy have been included in the text, although it is difficult to conceive what infections can necessitate such operations.

The book contains much practical material, offers sound advice and points out common errors. The illustrations, some in color, are numerous and instructive. The book should be of great interest to a seasoned, critical reader, if for no other reason than out of curiosity to see what is doing in medicine in a country ravaged by war.

Gynecology with a Section on Female Urology. By Lawrence R. Wharton, Ph.B., M.D., Assistant Professor of Gynecology, The Johns Hopkins Medical School, Baltimore, Maryland. Second edition. Cloth. Price, $10. Pp. 1,027, with 480 illustrations. W. B. Saunders Co., West Washington Square, Philadelphia 5, 1947.

The second edition of Wharton's book contains only a few changes in the text and a number of new illustrations. However, there is nothing wrong with this fact because the first edition was an excellent book and there have been no changes in the field of gynecology during the last four years which would demand radical changes in the book. The progress which has been made is indicated by the author because all the subjects including chemotherapy are brought down to date. In the large and excellent section on female urology, a chapter has been added on water cystoscopy, and the subject of the female urethra has been given a separate chapter. The present edition, like the first one, contains a large number of borrowed illustrations, but all of them are beautiful and instructive. The book is well written, the material embraces all the important phases of gynecology and female urology and the text and illustrations are clearly printed on good paper.

Diagnóstico y terapéutica quirúrgicos de urgencia. Por el Dr. F. Doménech-Alsina. Fabrikoid. Pp. 912, with 330 illustrations. Salvat Editores, S. A., 371 Lavalle, Buenos Aires, 1947.

This will be an excellent textbook for medical students who are desirous of getting acquainted with the European concept of modern emergency surgery. The treatment for burns and gas gangrene is excellently outlined and very logical. The chapter on brain and cranial injury is weak compared with the works of Cushing, Naffziger, Glasser and others. However, the book covers well the particular types of injuries it discusses. It gives some original approach to the problems of thoracic surgery which reflects the fruition of the Spanish civil war experience. Our own textbooks on thoracic surgery, as a whole, are better. The author draws extensively from his vast experience obviously gained during the two wars—especially during the Spanish civil war of some ten years ago. Concise and explicit directions are given for tendon and nerve surgery. Although the chapter on acute conditions of the abdomen falls short on diagnosis, it more than compensates in its therapeutic and surgical approach. The treatment of acute peritonitis is rather drastic and unlike ours. Sulfonamide drugs and penicillin are sparsely used, although these drugs are recommended in other septic cases taken up in the text. Streptomycin is not mentioned. Some rare abdominal lesions with acute syndromes are skilfully treated in the text, with excellent analytic and diagnostic approach. The various lesions incident to hand injury, including nerve and tendon sutures, are well covered. The chapter on urologic lesions is not sufficiently inclusive to be further informative to seasoned American urologists. It is, however, very pertinent for general surgeons. Although the index is poorly done, this is a good book for general surgeons and a quick reference work for surgical emergencies.

Handbook of Medical Emergencies. Thomas B. Fitzpatrick, M.D., Chairman, Contributors. Cloth. Price, $2.50. Pp. 106. Harvard University Press, Cambridge 38; Oxford University Press, Amen House, Warwick Sq., London, E. C. 4, 1947.

Although the methods, drugs and dosages used in hospitals for each of the various kinds of medical emergencies vary, the intern and the resident often find need for a compendium which provides a sound pattern. This handbook, prepared with consultative help from faculty members, presents procedures for each emergency, step by step in outline form—drugs to be used and their dosages, supportive therapy and other indicated measures. Diagnostic criteria for some of the emergencies and suggested procedures to establish the diagnosis are presented. Opposing pages throughout the book are left blank, so that treatment changes or other notes can be recorded readily. There are sections dealing with penicillin and sulfonamide therapy, intoxications, infectious diseases, diseases due to allergy and to physical agents, and diseases of the various body systems. The longest sections are, appropriately, on intoxications, cardiovascular emergencies and neuropsychiatric diseases. Examples of specific topics discussed are laryngeal infection, meningitis, Jarisch-Herxheimer reaction, serum accidents, acute agranulocytosis, barbiturate poisoning, botulism, acute hepatic insufficiency, peripheral arterial embolism, addisonian crisis, congestive heart failure and transfusion reactions. Tables of equivalents and of normal blood, urine and spinal fluid values are provided. This excellent handbook fits snugly into the intern's coat pocket. It should be helpful to the young practitioner as well as to the hospital physician, for it contains a wealth of immediately useful information. The Harvard University Press and the faculty deserve congratulation for encouraging the authors to embark on medical writing projects early in their careers periods of six to eight months. This study is not conclusive because it is based on totally inadequate data to support the claims made. Until more convincing data are presented, therefore, the use of fluorides in dentifrices, mouthwashes, tablets and lozenges cannot be recommended."

It would appear, therefore, that at the present time there is no acceptable scientific evidence adequately controlled which would indicate that fluoride tablets taken by adults will or will not reduce the incidence of dental caries.

TESTOSTERONE AND ARTERIOSCLEROSIS

To the Editor:—Of what benefit is testosterone in the treatment of arteriosclerosis? Is there not an element of danger? My patient cited the advice of a physician who also felt the androgenic hormone would help his anginal attacks. This patient insisted his nocturnal micturition was abolished by the use of this agent.

Paul W. Van Metre, M.D., Rockwell City, Iowa.

Answer.—Thus far convincing evidence has not been elicited that testosterone affects arteriosclerosis either beneficially or adversely. Arteriosclerotic changes start many years before they become clinically manifest, and it is highly unlikely that the processes are appreciably reversible. Arteriosclerosis in women is not affected by estrogenic therapy; there is little likelihood that the same disorder in men will be significantly benefited by androgen administration. The symptoms of the male climacteric, which usually occur somewhere between 55 and 65 years, are vague and indefinite: anxiety, indecisiveness, apokamnosis, hyperhidrosis, insomnia and the like. These may or may not be as much of psychogenic origin as due to hormonal depreciation, for at these years profound changes in social status and social security are apt to occur. Retirement, the dissolution of the family by marriage of children, loss of potency and diminution of the signs of respect from younger competitors in vocational fields all contribute to the emotional instability which is the predominant sign of the male climacteric. It is claimed that testosterone is of great value for these patients, but one must be skeptical and consider also the element of psychologic effect.

The dangers of testosterone are insidious and therefore all the more significant. Prostatic hypertrophy is accelerated and there is some evidence (not absolutely convincing as yet) that androgens may accelerate conversion of prostatic hyperplasia into cancer. Certainly the growth of prostatic carcinoma is accelerated. In the light of present knowledge, testosterone is probably not indicated in the management of arteriosclerotic disease.

PROLONGED PNEUMONIC CONSOLIDATION

To the Editor:—A patient has delayed resolution from lobar pneumonia. This is the second case of this kind I have had in the last twenty years. My treatment of the first case was unsatisfactory. The second case seems to be following the same course. Is there any treatment or way of handling this type of case that promises a cure?

H. I. Blood, M.D., Hazel Green, Ky.

Answer.—The question cannot be answered satisfactorily without information about the clinical course. Delayed resolution may imply simply a delay in the absorption of the infiltrate or exudate in the lung without subjective symptoms, which needs no treatment and usually clears up in time. If the term delayed resolution is used synonymously with unresolved pneumonia, a common error, it implies a continuation of the disease. In the case of pneumococcic lobar pneumonia, this occurs without explainable reason in rare instances even after proper treatment. Often, however, some other process is present such as bronchiectasis, abscess, foreign body or neoplasm. In viral pneumonia the course may last three or more weeks before resolving. Effort should be made to determine the type of pneumococcus involved in the first place and if any of the complications mentioned are present before proper therapy can be given.

HEMATOCRIT VALUES IN CHILDREN

To the Editor:—Would you give me the hematocrit values of normal children according to the age, ranging from birth to six years?

M.D., Buffalo.

Answer.—The hematocrit values for children vary greatly and do not have significance except in relation to the red cell count. At birth and during the first few days of life the hematocrit values are higher than the red cell count because of the fact that the mean volume of the red cell is larger than normal. The cell soon returns to normal, however.

COSMETIC EFFECT AFTER REMOVAL OF FACIAL CYST

To the Editor:—The answer to the query in The Journal July 19, 1947, page 1056, concerning the removal of a sebaceous cyst from the face with minimum postoperative scarring can be improved on. For years, in all wounds of the face, as well as in the incision for the removal of goiter, I have used a subcuticular suture of 000 iodine catgut. No stitch holes are made in the skin, the suture is absorbed, no dressing is used, and the resulting scar is less than by any other method.

John D. Singley, M.D., Pittsburgh.

To the Editor:—A simple, successful and nonscarring procedure to treat sebaceous cysts has been used in my practice for eighteen years and in dozens of cases. The advantage of the procedure is seen especially in sebaceous cysts which involve the entire ear lobe or which have been repeatedly infected and are thereby rendered more recalcitrant to surgery. Anesthesia consists of an intradermal wheal in the roof of the cyst with 1 per cent procaine, then forcible injection with considerable pressure of the anesthetic solution into the cyst sac. This anesthetizes the proposed point of incision and the wall of the cyst sac. The latter portion of the anesthetic maneuver is important. With the actual cautery, fulgurating point or a blunt or sharp instrument a small opening is made into the cyst and the retained sebum is then completely expressed. With a dry cotton applicator the interior of the cyst scar is dried, multilocular extensions explored and evacuated, and all sebaceous material removed. A cotton applicator soaked with liquefied phenol (95 per cent) is then inserted and all surfaces of the cyst sac are thoroughly cauterized. The skin about the incision is protected with frequent applications of 70 per cent alcohol on a cotton sponge. After five minutes the phenol within the sac is neutralized with alcohol, A drain is then inserted and changed each day tor two or three days. The wound is then permitted to heal. Sometimes the cyst sac presents at the incision on the second day and may be extracted, but this is not important as it will be absorbed. If properly done this will eradicate 100 per cent of sebaceous cysts without unsightly scarring.

Hiram D. Newton, M.D., San Diego, Calif.

To the Editor:—In The Journal, July 19, the question is asked as to the best method of removing a sebaceous cyst from a girl's face without leaving a scar. The answer states "There is no way possible to remove a cyst of this type without an incision through the skin," apparently evidencing unfamiliarity with the method described by Joseph A. Danna (*New Orleans M. & S. J.* 98:5 [July] 1945). By this technic a needle is inserted into the cyst and the unipolar desiccating current applied. I have treated sebaceous cysts by this method with uniform, complete obliteration and no resultant scar.

Norman R. Goldsmith, M.D., Lancaster, Pa.

To the Editor:—In The Journal July 19 the answer to the query on "Cosmetic Effect After Removal of Facial Cyst" is incomplete. It is misleading also because an "incision" in the ordinary sense of the word is not necessary for the cure of this lesion. Formerly it was believed that sebaceous cysts were formed by the blocking of outlets of otherwise normal sebaceous glands. Whether or not this is true, they can be cured by making artificial outlets provided the new outlets are made in a manner to insure their remaining open for a month or longer. I use the high frequency cutting current from a vacuum tube type of machine and make a hole about 0.5 cm. in diameter (larger for large cysts) which penetrates the skin and the sac. It remains open for a sufficient length of time for the sac to atrophy or regress to about the size of a normal sebaceous gland. When this occurs, it usually appears about like the hole remaining after extraction of a blackhead. This method is especially applicable in a case such as the one described, because the preceding infection would make removal in toto by sharp dissection rather difficult and productive of further scarring. This method is not new and it has certain disadvantages. A somewhat longer time is required for cure and some surgical judgment is required, as too small a hole will close prematurely, while an unnecessarily large one makes a conspicuous scar; but in my opinion the advantages far outweigh the disadvantages.

Lyman C. Blair, M.D., Houston, Texas.

To the Editor:—In Queries and Minor Notes in The Journal of July 19 Willis P. Baker of Santa Ana, Calif., inquired how to remove a sebaceous cyst from the face with a satisfactory cosmetic result. I should like to call attention to a method advocated by Dr. Joseph A. Danna in the *New Orleans Medical and Surgical Journal* 98:5 (July) 1945 in an article entitled "A Simple Treatment for Sebaceous Cyst." While I have used it since 1939, Dr. Danna is entitled to full credit for publicizing this effective method which consists in anesthetizing the high point of the cyst with procaine or some other local anesthetic and then inserting a fine needle into the cavity at this thinnest point. The current is then applied until a whitish eschar forms at the needle. The contents are then forcibly expressed. The cyst grows smaller and smaller until it eventually levels off with the skin. One treatment is usually enough for cysts up to 3 cm. but several punctures may be used for larger cysts. The cosmetic result is excellent if properly done.

Edwin Matlin, M.D., Mount Holly Springs, Pa.

To the Editor:—The answer to the query on Cosmetic Effect After Removal of Facial Cyst fails to mention utilization of the monopolar high frequency current. A technic of long standing and certainly widely known is to place the needle of a high frequency machine Oudin current into the cyst. The current soon softens the sebaceous material content, which is released when the needle is withdrawn. Further current on reinsertion of the needle into the first aperture loosens the sac. Very little traction with a forceps permits the withdrawal of the sac through the same opening. No suture is required. The scar is small. Sebaceous cysts of the face and scalp have been removed by this method over the past twenty years. The results are excellent. Local anesthesia is not required. The high frequency apparatus must be of the type permitting current flow from its Oudin coil with the needle inserted into the cyst. Some apparatus fails in this important feature of the method.

Herman Goodman, M.D., New York.

The Journal of the
American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 135, NO. 6 CHICAGO, ILLINOIS OCTOBER 11, 1947

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PRIMARY CANCER OF THE LUNG

Chairman's Address

ALTON OCHSNER, M.D.
MICHAEL DeBAKEY, M.D.
and
J. LEONARD DIXON, M.D.
New Orleans

Within the past few decades two well established and generally accepted concepts of primary cancer of the lung have been completely disproved. One is the concept that carcinoma of the lung represents the "rarest form of disease." [1] The other is the concept that pulmonary cancer is a hopeless condition. The present, completely antithetic concepts came about in the first instance through intensive and more accurate studies, which demonstrated that the lung is second in frequency only to the stomach as a primary site of malignant growth, and in the second instance through the pioneering achievement of Evarts Graham,[2] who showed fourteen years ago that resection of a primary pulmonary neoplasm is possible. This successful achievement contributed still further stimulation to studies on the incidence of the disease. In many respects these facts reflect the rapid progress which has taken place in this relatively short time in the field of thoracic surgery.

Our surgical experience with carcinoma of the lung covers a period of approximately twelve years, during which 412 patients with this disease were observed on the Tulane University School of Medicine service in Charity Hospital of Louisiana at New Orleans and in private practice at the Ochsner Clinic. Of the 412 patients, 246 underwent surgical exploration, and of the 246, 147 were subjected to primary pulmonary resection. This article is based on an analysis of the experience described, with particular emphasis on follow-up studies, which were carried out in all patients who submitted to primary resection.

INCIDENCE

In the recent literature much emphasis has been placed on the apparently increasing incidence of carcinoma of the lung. This phase of the subject has been extensively reviewed in previous publications.[3] Although some observers have expressed the opinion that this increase in incidence is actual, others believe that it is only apparent. However, the important practical consideration is that virtually all observers *who have analyzed the experience in their institution* over a long period of time have found a definite increase in the incidence of this disease. It now appears to be one of the most frequently encountered malignant neoplasms, being preceded only by the stomach as a primary site of cancer.

Our experience in the Charity Hospital of Louisiana at New Orleans supports these observations. During the ten year period ending Dec. 31, 1945 the annual incidence of carcinoma of the stomach, although showing transient changes, remained about the same, whereas the incidence of carcinoma of the lung revealed a steady rise. Suggestive of a racial factor is the fact that this increase in incidence occurred primarily among white patients, with little or no change among the Negro patients. This observation obtains further support from a comparison of the racial incidence of carcinoma of the lung and stomach with all admissions. Whereas the ratio of white to Negro patients is about 2 to 3 for carcinoma of the stomach and perhaps not significantly different from that for all admissions, for carcinoma of the lung this ratio is practically reversed, being 2 to 1 in favor of the white race. Although the white preponderance is even more striking among the patients in whom pneumonectomy was performed, this is readily explained by the large proportion of patients who were treated at hospitals which serve only white patients.

It has long been recognized that carcinoma of the lung is predominantly a disease of the male sex, an interesting but unexplained fact. In our series of 412 cases there were 356 (86.4 per cent) in men and 56 (13.6 per cent) in women. Of the 147 patients in whom pneumonectomy was performed, 121 (82.3 per cent) were men and 26 (17.7 per cent) were women. These figures conform closely with those obtained in a series of 8,575 collected cases in which 6,769 patients (78.9 per cent) were men and 1,806 women (21 per cent).[3a]

Carcinoma of the lung, like other carcinomas, occurs most frequently in the fifth, sixth and seventh decades of life. Approximately 90 per cent of the patients in

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From the Department of Surgery, Tulane University of Louisiana School of Medicine, and the Ochsner Clinic.

Read before the Section on Surgery, General and Abdominal, at the Ninety-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., June 11, 1947.

[1] Adler, I.: Primary Malignant Growths of the Lung and Bronchi, New York, Longman's, Green & Co., 1912.

[2] Graham, E. A., and Singer, J. J.: Successful Removal of an Entire Lung for Carcinoma of Bronchus, J. A. M. A. **101:** 371 (Oct. 28) 1933.

[3] (*a*) Ochsner, A., and DeBakey, M.: Carcinoma of the Lung, Arch. Surg. **42:** 209 (Feb.) 1941. (*b*) Ochsner, A.; Dixon, J. L., and DeBakey, M.: Primary Bronchiogenic Carcinoma: An Analysis of One Hundred and Ninety Cases, Fifty-Eight of Which Were Successfully Treated by Pneumonectomy, with a Review of the Literature, Clinics **3:** 1187, 1945; (*c*) Primary Bronchiogenic Carcinoma, Dis. of Chest **11:** 97, 1945.

both our total series as well as in the cases of resection were in this age group. The youngest patient in this series was 12 years of age, and the oldest was 81.

ETIOLOGY

The apparent increase in the incidence of carcinoma of the lung stimulated much speculation concerning its cause. The numerous explanations advanced to account for this fact have been reviewed in previous publications.[3] In the analysis of this series none of these factors was found to bear a significant relation to the occurrence of the disease. Both occupation and smoking, which have been particularly emphasized by some observers as possible etiologic factors, and which we were inclined previously to consider more seriously, were found to have no special significance in his analysis. Of the 147 patients in whom pulmonary resection was performed 76 per cent were smokers and 24 per cent were nonsmokers, and the number of those who had indoor occupations was almost equal to that of those who did outdoor work.

PATHOLOGY

Most primary tumors of the lung are malignant, and with few exceptions they are bronchiogenic in origin. Recently, Ikeda[4] has called attention to the occurrence of alveolar carcinoma of the lung, which differs from most pulmonary carcinomas in that it occurs with equal frequency in both sexes and originates in the alveoli rather than in the bronchi. There is a good deal of variation in the pathologic types of bronchiogenic carcinoma. They will not be discussed here, because they will form the subject of a subsequent report. Of the 147 cases of resection, there were 141 cases of bronchiogenic carcinoma, 2 cases each of fibrosarcoma and lymphoblastoma, and 1 case each of melanoma and neurogenic sarcoma. The right lung is involved somewhat more frequently than the left in primary cancers of the lung. In a series of 4,732 cases which we[3a] previously collected from the literature, there were 2,761 (58.3 per cent) tumors involving the right lung and 1,971 (41.6 per cent) involving the left lung. In the present series of 147 cases of primary pulmonary cancer in which pulmonary resection was done, the right side was involved in 87 cases (59 per cent) and the left side in 60 (41 per cent). The upper lobes of both lungs and the lower lobe of the right lung were involved in 11.6 per cent of cases. The fact that the upper lobes in our operative series were involved so frequently is significant because of the difficulty in bronchoscopic visualization and biopsy of these lesions.

CLINICAL MANIFESTATIONS

Because of the paucity of symptoms, particularly in the earlier stages, and the usually insidious onset, it is difficult to portray a characteristic clinical picture of carcinoma of the lung. These factors undoubtedly account for the frequent delay in diagnosis. In the present series of 147 cases of resection, the commonest symptoms were cough, loss of weight, pain or discomfort in the chest, a history of a previous respiratory infection, hemoptysis and dyspnea in about that order of frequency. Not infrequently only one or two of these manifestations are present, and occasionally the patient has no symptoms, the diagnosis being made from a routine roentgenogram of the chest. Cough is particularly difficult to evaluate because it may so frequently be explained as due to smoking. For this reason it is particularly important to distinguish any change in the cough and to determine any associated thoracic symptoms of recent development. Another manifestation which deserves some consideration is a history of a previous respiratory infection. Instead of prompt and complete recovery after such an infection the symptoms persist. Too frequently the significance of this is not appreciated until several months have elapsed, and then proper studies reveal the true diagnosis.

The physical observations in carcinoma of the lung are also variable and, like the symptoms, are generally not characteristic, especially in the earlier stages. They depend on the site, size and direction of growth of the tumor. Significant manifestations are more likely to be encountered if the tumor encroaches on the lumen of larger bronchi or on the pleura. A relatively small tumor completely occluding a main stem bronchus will produce impressive physical evidence, because of the atelectasis which follows the bronchial obstruction. On the other hand, a peripherally located tumor of considerable size which does not cause obstruction to a major bronchus or encroach on the pleura may produce relatively few physical symptoms.

DIAGNOSIS

The most important factor in the diagnosis of primary pulmonary neoplasms is the consideration of its possible presence. As emphasized previously, primary carcinoma of the bronchus should be suspected in every man over 40 years of age who has unexplained thoracic discomfort, a persistent cough or hemoptysis. This is the key to increasing the incidence of early diagnosis.

The important diagnostic methods include roentgenographic, bronchographic, bronchoscopic and cytologic examination of the sputum or bronchial secretions. Roentgenography is of great value in the diagnosis of bronchiogenic lesions, although in the early, nonobstructing lesions the roentgenogram may show no change. Serial roentgenograms are of particular value in the early stages by revealing an increase in the size of the shadow. Not infrequently, relatively small lesions will occlude a large bronchus and produce atelectasis of the lung distal to the point of occlusion. In such an instance a shadow much greater than one would expect from the size of the neoplasm will be seen in the roentgenogram. For this reason an opacity of considerable size does not necessarily signify actual invasion of the lung to that extent but may simply indicate a collapsed atelectatic lung. Centrally located lesions are often difficult to diagnose radiologically because of the confusion with hilar shadows produced by other lesions and by normal structures. Here again, the use of serial roentgenograms is of importance to determine the progress of the lesion. Occasionally, a relatively small lesion in the periphery of the lung will produce a large hilar shadow because of involvement of the mediastinal nodes, the shadow produced by the nodes being much larger than that of the originating lesion. Because of the stasis produced in an area of the lung drained by a bronchus which is occluded by the tumor or because of interference with the blood supply in the center of a rapidly growing tumor, necrosis and infection of the lung may occur with the production of a pulmonary abscess or bronchiectasis. In fact, in a man past 40 years of age an abscess of the lung which cannot be otherwise explained satisfactorily should always be considered of carcinomatous origin until

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4. Ikeda, K.: Alveolar Cell Carcinoma of the Lung, Am. J. Clin. Path. 15:50, 1945.

disproved. Roentgenographically, pulmonary abscess associated with bronchiogenic cancer not infrequently is evidenced by an irregularity of the wall of the abscess because of the neoplastic tissue which extends into the abscess cavity. Tomographic examination is of value in these cases because of the better visualization and the sharper delineation of the walls of the cavity. Roentgenographic examination of the chest should be performed routinely both because it can be done so simply and because it yields such good results. The importance of routine roentgenograms is shown by the fact that the growth, which was producing no symptoms and consequently was not suspected, was discovered as a part of the routine examination in 5 of our 147 cases in which pulmonary resection was done for carcinoma of the lung. In 121 of the 147 cases (82.3 per cent) the roentgenographic diagnosis was bronchiogenic carcinoma. The diagnosis of pulmonary abscess in 8 cases (5.4 per cent) was the most frequent error, but in almost every case an abscess was actually present in association with the carcinoma.

Although bronchographic study is not essential in all cases of bronchiogenic carcinoma, it is a valuable diagnostic aid in some instances. This is particularly true in lesions located in the periphery of the lung and in those which involve the bronchi of the upper lobe. In the peripherally located bronchi and in the bronchi of the upper lobe which are beyond the vision of the bronchoscopist, visualization of an obstruction in a bronchus is confirmatory evidence of a primary neoplasm. In our series of 147 cases of pulmonary resection, bronchographic examination was performed in 69 (47 per cent).

Of all the diagnostic methods, bronchoscopic examination with biopsy is the most accurate, because this procedure frequently not only permits direct visualization of the tumor but also the section of a piece of tissue for microscopic examination. Unfortunately, the procedure is of no value in a large group of cases because of the peripheral position of the tumor beyond the vision of the bronchoscopist or more frequently because of its position in the bronchi of the upper lobe, i. e., "around the corner," which precludes visualization by routine bronchoscopic methods. By means of a mirror or a special bronchoscope which permits periscopic visualization, many of these tumors can be seen, but biopsy is not possible. At times the induction of artificial pneumothorax by permitting the upper lobe to fall will bring the upper lobe bronchus in more direct line with the main stem bronchus and will permit visualization of an upper lobe bronchus which would not be visible otherwise. In our 147 cases in which pulmonary resection was performed for cancer, bronchoscopic examination was done in 125 cases. In the remaining group, the procedure was not used because of the peripheral location of the tumor. In the 125 cases in which bronchoscopic examination was performed a specimen for biopsy was obtained in 74 (59.2 per cent) with a positive diagnosis in 61 (82.4 per cent). Thus, of 147 cases of cancer of the lung treated by pulmonary resection, a positive diagnosis was obtained by bronchoscopic biopsy in 61 (41.5 per cent). This figure is somewhat lower than many of those reported by others in which a correct diagnosis was made bronchoscopically in as high as 60 to 75 per cent. Our lower incidence (of positive diagnosis by biopsy) may be due to the fact that operative intervention was performed on a large number of patients in whom the lesions were not visible bronchoscopically; although a positive preoperative diagnosis could not be made, the patient was not denied the advantage of operative treatment. This is supported by the fact that the lesion was in the upper lobes in almost half (49 per cent) of our cases of resection.

Another important diagnostic procedure, and one which may prove with increasing experience to be the most important, is cytologic examination of the sputum or bronchial secretions. It is particularly useful in cases in which the tumor is beyond the range of bronchoscopic visualization. From the reports in the literature the method is proving increasingly successful.[5]

The demonstration of tumor cells in the pleural fluid is also of diagnostic value. However, this method is of more prognostic than diagnostic significance; although the presence of tumor cells in the pleural cavity verifies the diagnosis, it usually indicates a hopeless prognosis.

Although Craver[6] has been an ardent advocate of aspiration biopsy in bronchiogenic carcinoma, we believe that this method should not be used in a patient in whom there is a possibility of resection but should be limited to cases in which operative intervention appears definitely contraindicated. A positive diagnosis frequently can be made following aspiration biopsy, but the procedure is undesirable because of the danger of implantation of tumor cells in the tissues traversed by the biopsy needle. We have seen 3 patients in whom implants have occurred along the site of the aspirating needle, a cure being precluded because of the implanted carcinoma on the thoracic parietes, and this complication has been reported by others.[7]

Although an exploratory operation possibly cannot be considered as a diagnostic procedure, it is our belief that in a man past 40 years of age with an unexplained thoracic complaint in whom the existence of a bronchiogenic neoplasm can be neither disproved nor verified, exploration of the chest is justified, especially since the risk is now minimal. Previously, we believed that an operation was not justified unless a positive diagnosis could be made preoperatively, but had we continued to adhere to that contention, we would have denied a number of patients an opportunity for cure. In our series of 246 cases in which an exploratory operation was performed, a positive diagnosis was established prior to operation in 164 (66 per cent).

TREATMENT

The treatment of primary cancers of the lung consists ideally of extirpation of the involved lung before the lesion has extended beyond the confines of the lung. Extirpation of the process offers the only cure. Whereas occasionally a patient may be benefited by irradiation, generally the results from this form of therapy are of little or no value. It may be used as a palliative procedure and may be of value in hopeless cases in the alleviation of symptoms. Certainly, in view of our present knowledge, it is not justifiable to use roentgen therapy in early and operable lesions. Recently, the use of nitrogen mustard, methyl-*bis*(beta-chlorethyl) amine hydrochloride, has been reported to be of possible value in alleviating symptoms in inoperable cases, but we have had little experience with its use.

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[5] (*a*) Dudgeon, L. S., and Patrick, C. V.: New Method for Rapid Microscopic Diagnosis of Tumors with Account of Two Hundred Cases so Examined, Brit. J. Surg. **15**: 250, 1927. (*b*) Dudgeon, L. S., and Wrigley, C. H.: On Demonstration of Particles of Malignant Growth in Sputum by Means of Wet Film Method, J. Laryng. & Otol. **50**: 752, 1935. (*c*) Gamba, R., and Lamberti, C. E.: La inclusión de esputos en el diagnóstico de cáncer del pulmón, Prensa méd. argent. **23**: 2711, 1936. (*d*) Barrett, N. R.: Examination of Sputum for Malignant Cells and Particles of Malignant Growth, J. Thoracic Surg. **8**: 169, 1938. (*e*) Herbut, P. A., and Clerf, L. H.: Bronchogenic Carcinoma: Diagnosis by Cytologic Study of Bronchoscopically Removed Secretions, J. A. M. A. **130**: 1006 (April 13) 1946.

[6] Craver, L.: Diagnosis of Malignant Lung Tumors by Aspiration Biopsy and by Sputum Examination, Surgery **8**: 947, 1940.

[7] Dolley, F. S., and Jones, J. C.: Lobectomy and Pneumonectomy for Lung Suppuration and Malignancy, Journal-Lan [illegible] 162 and 1939.

Contraindications to exploration, we believe, are relatively few. Involvement of the phrenic and recurrent laryngeal nerves has been considered by some a definite contraindication to exploration, but we do not share this opinion. Although in many instances these cases will prove inoperable, we have repeatedly seen persons with this type of involvement in whom at exploration it was possible to resect the lesion. Our indications of definite inoperability are distant metastases, obvious involvement of the carina or trachea and the observation of malignant cells in the pleural fluid. Every other patient should be given the advantage of thoracic exploration, because only in this way can one determine whether the lesion is operable.

The desideratum in the treatment of bronchiogenic carcinoma is curative resection of the lung. However, we are of the opinion that in many instances palliative resection is justified. Even though the patient may subsequently succumb to extension of the malignant process, removal of the involved lung with its contained tumor, which has undergone necrosis and which has become infected with the development of an abscess, is sufficient justification for the procedure. The remaining days of the patient's life are made more comfortable, and he is spared the sepsis and the continued exudation which would have existed had the lung not been removed. We appreciate the fact that there may not be complete agreement with this point of view, but it seems to us justifiable on a purely humanitarian basis. Moreover, as will be observed later, the survival periods following palliative resection seem to be sufficiently long to justify operative therapy.

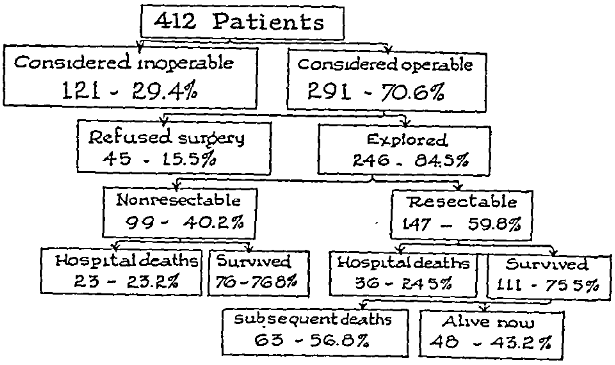
412 Patients
Considered inoperable 121 - 29.4%
Considered operable 291 - 70.6%
Refused surgery 45 - 15.5%
Explored 246 - 84.5%
Nonresectable 99 - 40.2%
Resectable 147 - 59.8%
Hospital deaths 23 - 23.2%
Survived 76 - 76.8%
Hospital deaths 36 - 24.5%
Survived 111 - 75.5%
Subsequent deaths 63 - 56.8%
Alive now 48 - 43.2%

Fig. 1.—Schematic representation of results in present series of 412 cases of pulmonary cancer.

No attempt will be made here to discuss technical considerations of the operation, since they have been presented elsewhere.[8] We are still of the opinion that with few exceptions pneumonectomy is the procedure of choice because it permits more thorough extirpation of the involved tissue and the possibly involved hilar lymph node.[9] Simple lobectomy was performed in only 2 of the 147 cases of resection, in 1 because at the time of operation the condition was thought to be inflammatory (this patient has remained well for over five years), and in the other as a palliative procedure. Both the anterior and the posterolateral approaches have been used, but in general the former is preferred because it has seemed to us to have certain advantages over the latter and because it has proved technically satisfactory.

ANALYSIS OF RESULTS

Of the 412 cases reported in this paper, 246 patients (59.7 per cent) were operated on and 166 (40.3 per cent) were not operated on (fig. 1). The latter number includes 121 (29.4 per cent) cases which were considered clearly inoperable at the outset and 45 in which the lesion was considered operable but the patients refused surgical treatment (fig. 1). Of the 246 lesions which were explored, 99 (40.2 per cent) proved to be nonresectable and 147 (59.8 per cent of the number explored, or 35.7 per cent of the total series) were resected. In other words, of every 3 cases of clinical pulmonary cancer 2 will appear to be operable and only 1 will prove to be resectable. Although these incidences are somewhat higher than those found in a collected series of 2,034 cases (29.2 per cent for exploration and 13.4 per cent for resection), they are in accord with those appearing in the more recent reports which reflect an encouraging trend toward higher incidences.[10] However, they are still much too low and emphasize the need for wider recognition of the problem and for earlier diagnosis.

Of the 99 patients in whom the tumor was not resectable, 23 died in the hospital (23.2 per cent) and 76 (76.8 per cent) left the hospital alive. Of the 147 patients in whom resection was performed, 36 (24.5 per cent) died in the hospital and 111 (75.5 per cent) left the hospital alive. Of the latter group, 63 (56.8 per cent) have subsequently died and 48 (43.2 per cent) are still alive, 1 of whom was operated on eleven years ago.

An analysis of the resectable tumors according to whether operation was performed before or after 1942 shows the hospital mortality for these periods to be 46.4 per cent and 19.3 per cent, respectively. It may be reasonably assumed that the lower mortality rate in the later period is due to better operative technic and better preparation and postoperative care of the patient. The relatively high operative mortality for the entire series (24.5 per cent) is, we believe, due in great measure to the fact that resections were performed in patients with extensive disease as well as in those with poor cardiovascular function. This is illustrated by the fact that in order to resect the lesion which had extended beyond the confines of the lung it was necessary to ligate the pulmonary vessels in the pericardium in 18 cases (12 per cent), to resect and suture a portion of the auricle in 8 (5 per cent), to resect a portion of the diaphragm in 9 (6 per cent) and to resect a major portion of the chest wall in 8 (5 per cent). Earlier in our experience many of these cases would have been considered inoperable, but we now believe that the limits of operability can be extended by these procedures and that the effort is justified in order to give the patient his only chance of relief.

The postoperative complications were principally empyema and a blown bronchus. In 18 (12.2 per cent) of the 147 cases empyema developed, and in 8 of these

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[8] Ochsner, A., and DeBakey, M.: Primary Pulmonary Malignancy: Treatment of Total Pneumonectomy; Analysis of Seventy-Nine Collected Cases, and Presentation of Seven Personal Cases, Surg., Gynec. & Obst. **68**: 435, 1939; Surgical Considerations of Primary Carcinoma of the Lung: Review of the Literature and Report of Nineteen Cases, Surgery **8**: 992, 1940. Ochsner, Dixon and DeBakey.[3b]

[9] Ochsner, A., and DeBakey, M.: Significance of Metastasis in Primary Carcinoma of the Lungs, J. Thoracic Surg. **11**: 357, 1942.

[10] Ochsner, A.; DeBakey, M., and Dixon, J. L.: Primary Pulmonary Malignancy Treated by Resection, Ann. Surg. **125**: 522, 1947.

(5.4 per cent of the entire group) the bronchus opened. It is our general impression that chemotherapy, whether in the form of sulfonamide drugs or penicillin, has not materially influenced the incidence or the morbidity of these complications.

Further evidence of improvement in the surgical management of these cases with increasing experience is shown by a consideration of the morbidity rate and the length of hospitalization in the patients treated before January 1942 and those treated since that date. In the former group the longest hospital stay was 107 days, the shortest 11 days, and the average 32.3 days. In the latter, the longest period of hospitalization was 118 days and the shortest 6, with an average of 13.5 days. It would seem that the decrease in the hospital stay in the later period is a reflection of better preoperative preparation and more effective postoperative care.

Of the patients who died in the hospital, death occurred within the first twenty-four hours in 33 per cent, from the first to the fifth day in 19.4 per cent, from the sixth to the tenth day in 22.2 per cent, from the eleventh to the fifteenth day in 11.1 per cent and on the eighteenth day in 1 case, and 4 died on the forty-third day. In the 36 cases which ended fatally within the hospital, cardiovascular lesions were responsible for the fatality in 47 per cent. The fact that almost half of the hospital deaths were the result of cardiovascular lesions has prompted us to include a cardiologist in our thoracic team in order to observe these patients preoperatively and postoperatively. It is our belief, however, that the incidence of this cause of death will not be greatly reduced unless the criteria of operability are so strictly limited that patients in whom this complication is likely to occur are excluded from surgical treatment and are thus denied what is admittedly their only chance of salvage.

SURVIVAL RATES

In the evaluation of any form of therapy follow-up studies are essential, and this is particularly true for malignant disease. In this series of 147 cases in which resection for pulmonary cancer was done, every patient who was operated on six months or more ago has been followed to date, in the majority of instances the postoperative examination being made by one of us. Because the 123 patients who had been operated on six months ago or longer were treated surgically at varying periods of time during the past eleven years, the number of cases in each category is different, and the numbers become smaller as the possible survival time increases. Patients operated on only a year ago, for instance, obviously have had no opportunity to survive longer than a year. Of the 123 patients operated on six months or more ago, a little over half survived the first six-month period after operation (fig. 2). The 55 deaths in this period, however, include the 36 deaths which occurred in the hospital immediately after the operation. Slightly less than three fifths of the patients, again including those who died in the hospital, died within the first year. After that time, however, the death rate increased much less rapidly. At the end of five years approximately one fourth of the patients (23.3 per cent) who had submitted to resection were still alive (fig. 2). To express it differently, the distribution curve for the survival rate drops rather rapidly within the first two years after operation, but by the third year it becomes stabilized and continues almost as a plateau until the fifth year. It is obvious that a patient with carcinoma of the lung who has survived pneumonectomy for two years has a good chance of being alive at the end of five years.

If hospital fatalities are excluded and an analysis is made only of those patients who left the hospital alive, the distribution curve is similar to the curve for the entire group but is simply at a higher level and thus appears more encouraging; the survival rate at the end of five years then reaches 44 per cent as contrasted with 23.3 per cent when all the patients are included (fig. 2).

Unfortunately, as has already been indicated, there was a large number of cases in this series in which there was gross evidence of extension to other structures, such as the mediastinal lymph nodes or the adjacent viscera. Obviously, when such extension has occurred the chance of a cure is considerably less, because once there has been involvement of the adjacent structures the possibility of removing all the tumor cells, even though these structures are resected, is reduced. Therefore we divided the cases into two groups: those in which there was no gross evidence of extension beyond the lung at the time of operative intervention and those in which the other structures were involved. As was expected the survival rate among the patients with localized growths was significantly greater than that for patients with extension, the figures being 42.9 per cent and 6.2 per cent, respectively, at the end of five years (fig. 3).

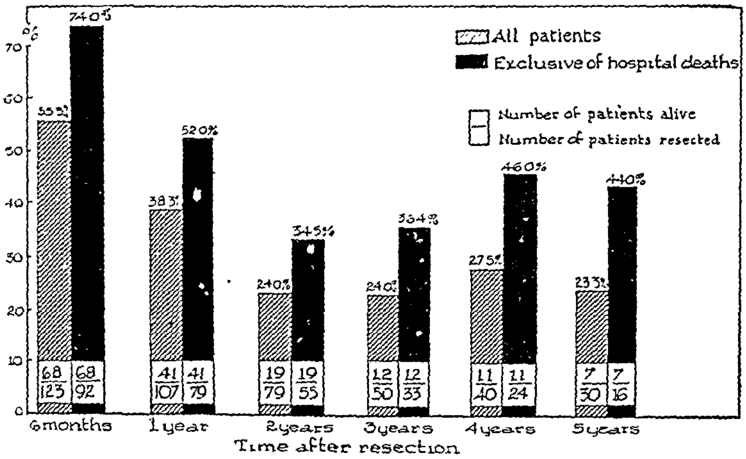

Fig. 2.—Survival rate after resection in present series of pulmonary cancer.

Since with increasing experience there has been definite improvement in the operability, hospital mortality and morbidity of pulmonary resection for carcinoma of the lung, it was considered possible that similar improvement might be reflected in the survival rates. Accordingly, the material was analyzed with this objective in mind, the cases having been divided into two groups, depending on whether operative intervention was performed before or after 1942. The analysis of the whole group, as well as the localized and the nonlocalized lesions, reveals no [illegible]t diffe ences in the survival rates before and after 1942. It would therefore seem that improvement in the technical management of the case exerts little influence on the survival rate and that the most important factor in this connection is extent of the growth or the feasibility of complete extirpation of the lesion.

To summarize the operability and survival rate for all cases of carcinoma of the lung according to our present statistics, it may be stated that in a given group of 25 cases, only 15 would meet the criteria of operability and thus be explored, only 9 would prove resectable, almost 7 would survive the operation and only 2 would survive five years or longer (fig. 4). On the other hand, if it were assumed that all the patients were seen early enough that resection could have been performed in all 25 cases, then based on our present tatistics, which include many cases with palliative esection and consequently minimal chance of cure, 15 patients would survive six months to a year and 5 plus would survive five years or longer. There is no reason to consider this an impossible goal.

It is of interest to compare these results with those obtained in the treatment of gastric carcinoma. The relative frequency and the clinical importance of gastric cancer have been generally realized for a long time. There has been no comparable appreciation of the frequency and clinical importance of pulmonary cancer. Presumably, then, better results would be expected from treatment in gastric carcinoma than in bronchiogenic carcinoma, for the greater awareness of the problem should permit early diagnosis and therefore more effective therapy in a larger number of cases. Yet this is not the situation. The survival rate in carcinoma of the lung is now actually better than the survival rate in carcinoma of the stomach. The survival rate in carcinoma of the stomach is reported to be about 5 per cent, and our own experience is in accord with this figure. The survival rate in carcinoma of the lung is about 8 per cent. These observations seem to justify two conclusions: 1. The clinical course of bronchiogenic carcinoma is slower than that of gastric carcinoma. 2. With greater awareness of the problem of pulmonary cancer by the members of the medical profession, and with a consequent increase in the proportion of cases diagnosed early, there will be a considerable improvement in the survival rate of the disease.

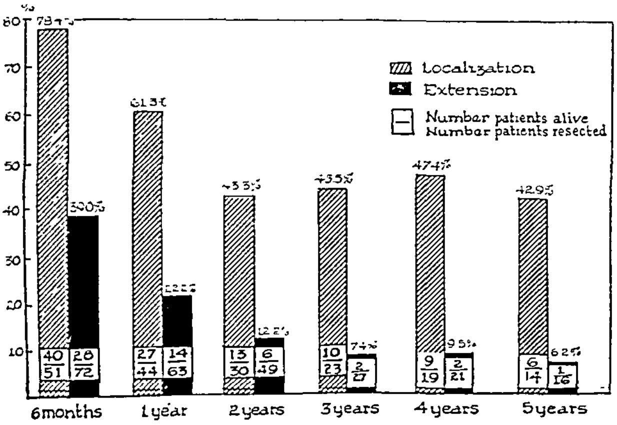

Fig. 3.—Survival rate after resection according to extension and localization of lesion.

SUMMARY AND CONCLUSION

1. An analysis has been made of the experience with primary pulmonary cancer during a period of almost twelve years and in a total of 412 cases, with special emphasis on diagnostic considerations and survival rates.

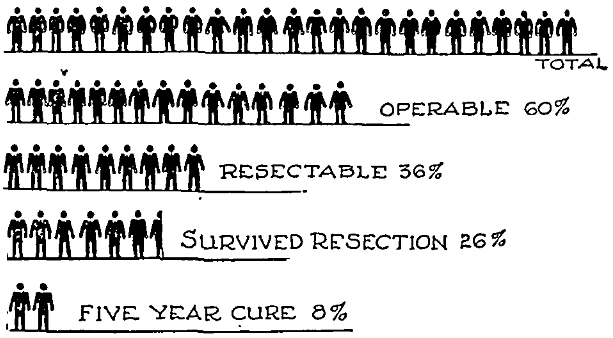

Fig. 4.—Schematic representation of actual survival expectancy in pulmonary cancer based on present experience.

2. Bronchiogenic carcinoma is a common lesion and probably represents about 10 per cent of all carcinomas. It is a disease primarily of men, most frequently in the fifth, sixth and seventh decades of life.

3. The right lung is involved somewhat more frequently than the left. In the present series of cases of resection, the upper lobes of both lungs and the lower lobe of the right lung were involved with equal frequency.

4. The disease begins insidiously, and there is no characteristic clinical picture. The most important factor in making an early diagnosis is the assumption that an unexplained thoracic disorder in a man past 40 years of age is bronchiogenic carcinoma until proved otherwise. Frequently the first manifestation in bronchiogenic carcinoma is an antecedent respiratory infection, the symptoms of which do not subside as they normally should.

5. Routine roentgenologic examination is the most valuable of all diagnostic methods. Bronchoscopic examination, when it permits visualization of the tumor and removal of tissue for biopsy, is perhaps the most accurate. Unfortunately, the lesion in a high proportion of cases (approximately half of the present series) is beyond the range of bronchoscopic visualization. Cytologic examination of the sputum or the material obtained by bronchoscopic aspiration is of increasing diagnostic importance.

6. Although it is extremely desirable to make a positive diagnosis before operation, in many instances (in the present series, 33 per cent) it is necessary to confirm the presumptive diagnosis by exploratory thoracotomy. The incidence of operability in carcinoma of the lung remains discouragingly low and emphasizes the need for wider recognition of the problem and for earlier diagnosis. Of the 412 cases in the present series, 246 (59.7 per cent) were explored and 147 (35.7 per cent) were resected. In simpler terms, of every 3 cases 2 will appear operable and 1 will prove resectable.

7. The surgical mortality has shown progressive improvement. Whereas the total mortality was 24.5 per cent for the entire series, it was 46.4 per cent for the group operated on before 1942 and 19.3 per cent for those operated on since that date.

8. The most frequent cause of death in the cases [illegible]le the patient was in the hospital was cardiovascular disease (47 per cent). This risk must be assumed if patients in whom cardiovascular complications are likely to develop are not to be denied their chance of salvage.

9. Of the patients in whom resection of the lung was possible and who were operated on five years ago or more, 23.3 per cent are still alive. This gives about an 8 per cent five year survival rate for all cases of carcinoma of the lung.

10. Although the results following the surgical treatment of primary malignant neoplasms of the lung are not good at the present time, they are better than those obtained in the treatment of gastric carcinoma, even though this latter lesion has been known for some time and its frequency is generally appreciated by the members of the medical profession. When the physician becomes cognizant of the relative frequency of primary pulmonary malignant neoplasms and recognizes these cases earlier, much better results will be obtained. The fact that a better than 20 per cent five year salvage rate can be obtained in cases of resection, in many of which only palliative resections are performed, indicates that the lesion is relatively slow-growing and that the ultimate outlook is not as pessimistic as it has been considered in the past.

AMERICAN RADIOLOGY

Its Contribution to the Diagnosis and Treatment of Disease

GEORGE W. HOLMES, M.D
Boston

Radiology is, comparatively speaking, a youth among the great medical specialties. Its entire life history lies within the life span of the average person; it is only half as old as the American Medical Association. Roentgen made his great discovery on Nov. 8, 1895. Radiology may be said to have appeared as a specialty in American medicine in the year 1900 with the organization of the American Roentgen Ray Society. It was not listed as a major specialty by the American Medical Association until 1921. Yet in this relatively short period of time it has revolutionized the practice of medicine. Physicians have always been prompt to utilize great scientific discoveries whenever they seemed to offer help in the diagnosis or treatment of disease. In the long history of medicine there is no record of the acceptance of a scientific discovery with such enthusiasm as that which greeted the roentgen ray. During the year 1896 more than one thousand articles and fifty books on the subject were published;[1] three of these books and many of the articles were on the use of the roentgen ray in medicine.

In the early years discoveries were being made almost daily and were being reported by surgeons, internists, general practitioners, engineers and physicists; and it is still a fact that many of the great advances in radiology are being made by workers outside the specialty. This is true to some extent in any new field, but radiology, perhaps more than any other specialty, is dependent on progress in other branches of medicine and on the instruments which it uses. Each step forward in associated fields has been followed by a corresponding advance in the science of radiology. It has rarely been the leader, but with an increase in the number of young *men well trained in the basic sciences who are entering* the specialty one may expect the radiologist to take a more active part in medical research. No other specialty with the exception of pathology, which is not a clinical specialty, covers as wide a field. Perhaps it is this very wideness of opportunity that has prevented detailed study, and without detailed study new facts *are not discovered. On the other hand, an amazing* number of advances in the diagnosis and treatment of disease, covering almost the entire field of medicine, may be directly attributed to the use of the roentgen ray. I shall point out only a few which seem to me to have had the greatest effect on medical progress.

CONTRIBUTIONS TO DIAGNOSIS

Diseases of the Bones and Joints.—The first use of the x-ray in medicine was in the diagnosis of diseases of, or injury to, the bones and joints, and this is still one of its most important uses. So many reports appeared almost simultaneously that it is impossible to give priority to any one author, but the names of some of the early workers have become permanently associated with certain procedures or with certain diseases. Warren's anatomic variations of the hands and feet, Hickey's[2] work on the development of the human skeleton, and Baetjer's contribution to the diagnosis of tumor of the bone are only a few of the first important publications. The great advances which have been made in the treatment of injuries of the bones and joints would not have been possible without the use of the roentgen ray. The painful manipulations formerly necessary to establish a diagnosis are no longer required. The data obtained from a properly conducted roentgenologic examination enable the surgeon to select at once the appropriate treatment, and repeated examinations demonstrate the results of treatment and the progress of healing. All this information is secured with the minimum amount of discomfort to the patient.

Although as early as 1896 records of disease conditions in bone began to appear in the literature, it was not until 1901 that any serious attempt to classify these lesions and to correlate them with the pathologic observations was made. Köhler[3] of Germany and Hickey, Caldwell[4] and Baetjer in this country made outstanding contributions, and later Baetjer and Waters[5] published their important work on tumor of the bone. This, with the investigations of Codman[6] and others, has brought the roentgen diagnosis of lesions of the bone to such a degree of accuracy that it is now considered the most valuable single factor in prepathologic diagnosis.

There are a considerable number of more or less generalized diseases of bone, perhaps best illustrated by hyperparathyroid disease, which have become better understood following the general use of the roentgen ray.

On the Board of Consultation and from the Department of Radiology, Massachusetts General Hospital.

Centennial address read before the Section on Radiology at the Ninety-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., June 11, 1947.

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[6] Codman, E. A.: Nomenclature Used by Registry of Bone Sarcoma, Am. J. Roentgenol. 13:105, 1925.

Diseases of the Chest.—In 1901 Williams[7] of Boston published a book of 650 pages concerning the use of the roentgen rays in medicine and surgery. His studies of the chest were made almost entirely with the fluoroscope, yet so accurate and detailed were his observations that he was able to lay a foundation for the interpretation of most of the pathologic changes occurring in the chest. He was probably the first to describe the changes in the heart resulting from vitamin B_1 deficiency—the so-called beriberi heart, a condition unknown at that time. Williams was a diagnostician of unusual ability. He made a complete physical examination on all patients before subjecting them to examination with the roentgen ray, and many of his observations were checked by postmortem examination. He was one of the first to proclaim the importance of the roentgen examination in the diagnosis of diseases of the chest. With better equipment and increasing ability in the art of interpretation, Williams' statements have been amply justified. Most clinicians today would hesitate to make a negative diagnosis without the help of the roentgen ray.

The development of iodized oil by Sicard and Forestier[8] in 1921 and its use in visualization of the bronchial tree provided a new and dramatic approach to the diagnosis of diseases of the bronchi. It has added greatly to the understanding of such lesions as bronchiectasis and tumor of the bronchi. The recent advances in thoracic surgery and in the use of the bronchoscope have made it possible for the radiologist to interpret more accurately shadows such as those caused by obstruction of the bronchi, which formerly were not well understood.

The work of Hampton and Castleman[9] and others on the diagnosis of pulmonary infarction has led to the development of new therapeutic procedures in the management of pulmonary emboli.

Although the use of the roentgen ray has not been of as much assistance to the clinician in the study of the heart and great vessels as in the examination of the respiratory system, nevertheless it has led to a better understanding of the anatomic and physiologic structure of these organs. Among the early contributors in this field were Williams, Baetjer and Pfahler in this country and Köhler in Europe. In 1905 Köhler[10] introduced teleoroentgenography. This procedure—the taking of films at great distances—produced roentgenograms free from magnification and distortion which permitted accurate measurement of the heart and great vessels. Many errors in the older methods were found and corrected. Perhaps the most important single contribution in this field was that of Robb and Steinberg,[11] who in 1938 gave a 70 per cent solution of iodopyracet injection ("diodrast" N. N. R.) into the median basilic vein and followed it by taking a series of roentgenograms of the heart, great vessels and lungs. This method is of great value as a means of studying the physiology of these organs; it is also of assistance in studying the anatomy of the heart in both health and disease, as shown by Sussman and his associates.

The use of motion pictures to demonstrate the living, moving organs of the chest has been attempted by many workers. The observations made by Stewart[12] are perhaps the most important, as they have laid a foundation on which others, using equipment soon to be developed, may add a new chapter in roentgen diagnosis. Stewart, by photographing the image on the fluoroscopic screen, was able to demonstrate the pulsating heart after its chamber had been made opaque by the Robb-Steinberg method. With improvement in fluoroscopic screens and development of a method of intensifying images produced by light of low intensity, this procedure should become of considerable practical importance.

The Gastrointestinal Tract.—Probably the first successful attempt to use the roentgen ray in studying the gastrointestinal tract was made by Cannon[13] in 1898, when he introduced opaque substance into the esophagus of animals. In 1901, in collaboration with Williams, he studied the human stomach after the ingestion of a meal containing bismuth subnitrate But it was not until after the publications of Rieder[14] in 1904 that this method of examination became generally accepted. During the next decade the chief progress was along the lines of improvement in technic and in the correlation of abnormal observations. It was in this period that serious injuries to persons who had exposed themselves to the roentgen rays during prolonged fluoroscopic examinations appeared in considerable numbers, and the use of the fluoroscope began to be avoided by the radiologists in this country. As a result, most of the advances in gastrointestinal diagnosis were made in the clinics of Europe. In America the outstanding contributors were Leonard,[15] Cole,[16] and Carman.[17] Cole introduced a method of examination in which serial photographic plates replaced the fluoroscopic examination. Later, a modification of this method was combined with use of the fluoroscope to produce the present more or less standardized examination. Accurate diagnosis of lesions of the gastrointestinal tract has now become almost entirely dependent on the data obtained by a skilled observer during the roentgen examination. The early detection of lesions which in the past were not discovered until they had passed a curable state has led to advances in therapeutic measures and to the relief of many patients who would formerly have succumbed to their disease.

During the first years after Roentgen announced his discovery many attempts were made to demonstrate gallstones by the use of the roentgen ray. Beck[18] in 1900 was probably the first to achieve satisfactory results. With improvement in apparatus and in technic, Case,[19] Cole and George[20] and Leonard were able to demonstrate a high percentage of the gallstones of the opaque variety. It was not until 1924, however, when

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[14] Rieder, H.: Radiologische Untersuchungen des Magens und Darmes beim Lebenden Menschen, München. med. Wchnschr. **51**: 1548, 1904.

[15] Leonard, C. L.: Application of Roentgen Rays to Medical Diagnosis, J. A. M. A. **29**: 1157 (Dec. 4) 1897.

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[17] Carman, R. D.: Roentgen Diagnosis of Diseases of Alimentary Canal, Philadelphia, W. B. Saunders Company, 1920.

[18] Beck, C.: On the Detection of Calculi in Liver and Gallbladder, New York State J. Med. **71**: 73, 1900.

[19] Case, J. T.: Roentgenoscopy of Liver and Biliary Passages with Special Reference to Gallstones, J. A. M. A. **61**: 920 (Sept. 20) 1913.

[20] Cole, L. G., and George, A. W.: Roentgen Diagnosis of Gallstones by Improved Methods, Boston M. & S. J. **172**: 326, 1915.

Graham and Cole[21] showed that the intravenous injection of tetrabromphenolphthalein would cause the gallbladder to become visible, that the use of the roentgen ray in the diagnosis of diseases of this organ became firmly established. Since then many improvements in technical methods have been made, and new and better preparations for oral as well as intravenous administration have been introduced. Today, as a result, accurate diagnosis of the presence or absence of disease of the gallbladder can be made, and the physiology of the gallbladder both in health and disease is better understood than formerly.

The Genitourinary Tract.—That renal stones could be demonstrated roentgenologically was discovered almost at once, and this simple procedure has now reached such a degree of perfection that negative as well as positive observations are made routinely. The injection of opaque substances into the urinary tract in order to visualize the kidney pelves and ureters was done as early as 1904, and by 1918 the employment of a solution of sodium iodide for this purpose was producing satisfactory results. In 1923 Rowntree and his associates[22] conceived the idea that the urinary tract could be made visible by utilizing its excretory function. Their experiments were not entirely successful, but in 1928 Lichtwitz and others[23] produced an organic compound of iodine which, when injected intravenously, was excreted almost wholly by the kidneys. This procedure with some modifications has greatly simplified the methods of studying the urinary tract and, when combined with other measures, has removed most of its difficulties.

The roentgen method of examination has been widely used in the diagnosis of diseases of the reproductive organs, in both the male and the female, but in this field its use, though helpful, has not led to such far reaching results as in the examination of the urinary tract. Space does not permit a discussion of this subject.

Diseases of the Nervous System.—The roentgen examination played an unimportant part in the diagnosis of diseases of the nervous system until 1918, when Dandy[24] injected air directly into the ventricles of the brain through a trephine opening. A year later he described the procedure of encephalography using the intraspinal route.[25] This epoch-making accomplishment was followed by contributions from Sosman,[26] Dyke[27] and others, until the technical procedure and the diagnostic criteria were established, and the roentgen examination became an important factor in neurologic diagnosis.

In 1922 Sicard and Forestier[8] reported that iodized oil could be injected into the spinal canal for diagnostic purposes without injury to the patient and that in this manner tumors could be demonstrated. Subsequent work by Camp[28] and others placed the diagnosis of tumors of the spinal cord on a solid foundation. Mixter and Barr[29] as well as Hampton and Robinson[30] reported in 1934 that this form of examination could be used to show protrusion of intervertebral disks. The accurate diagnosis of this condition, in addition to the fact that it can be cured by surgical operation, has brought about a revolution in the diagnosis and treatment of low back pain.

Although many attempts have been made to show changes in the peripheral nerves, the results so far have been unsatisfactory.

It has been possible to sketch here only the briefest outline of the accomplishments of radiology in the field of diagnosis. Many important contributions have of necessity been omitted. For a more complete record the reader is referred to the publications of Brown[31] and Rigler.[32]

THERAPEUTIC USE OF THE ROENTGEN RAY AND RADIUM

The use of the roentgen ray in the treatment of disease was attempted as early as 1899, and since then it has been tried in a great variety of lesions. The results, although at times spectacular, have not brought about a revolution in therapeutic procedures as was the case in diagnostic methods. Perhaps the greatest usefulness of the roentgen ray, as of radium, is in the treatment of malignant tumors, especially those which do not respond well to other forms of therapy. In this field progress has been due largely to the efforts of the physicist, the engineer and the biologist, whose work has preceded that of the clinical radiologist. Improvement in equipment has been continuous. The establishment of an international unit of dosage by Duane and others permitted comparison of the results of treatment; and the work of Quimby[33] and others both in this country and in Europe has made possible a better understanding than formerly of tissue dosage and of the effect of irradiation on normal and abnormal cell growth. The biologist and the worker in medical research using radiation in some of its forms have been able to probe deeply into the mysteries of the living cell, the transmission of hereditary characteristics and the origin of life itself. The development of the cyclotron in 1941 by Lawrence and the production of radioactive isotopes have opened up an entirely new field of investigation. It is still too early to evaluate the studies being made on the movement of inorganic substances within the body or on the use of these substances in the treatment of disease. That the results will be of far reaching importance there can be no doubt.

CONTRIBUTIONS IN THE PREVENTION OF DISEASE AND IN PUBLIC HEALTH

Although the use of roentgenologic examination has made possible the detection of many types of disease in the early stages of their development, increasing the possibility of lasting cure, it has not been widely used in preventive medicine except in conditions involving the respiratory system. In the fight against tuberculosis the roentgen ray examination has played an important part. Williams in 1901 emphasized its value in this field, but it was not until Chadwick[34] in 1924 showed that it could be used to great advantage in the examination of school children that it became generally accepted in public health programs. The high cost of this type of examination prevented its adoption as a routine until 1938, when Potter,[35] two years after the development of the photofluorographic technic in Europe, introduced it into this country. This method has now been brought to a high degree of perfection, and its low cost permits its use in survey studies of large groups of persons. It has already added considerably to the knowledge of the prevalence of tuberculosis in different age groups and of the hazards to which the worker in various occupations is exposed.

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[33] Quimby, E. H.: History of Dosimetry in Roentgen Therapy, Am. J. Roentgenol. **54:** 688, 1945.

RADIOLOGY IN MILITARY MEDICINE

The roentgen rays were first used as an aid in the diagnosis of war injuries by physicians of the British army during the Tirah Campaign of 1897.[36] The contributions of radiology, however, were of minor importance to military medicine until World War I, when roentgenography became widely used not only in the diagnosis of injuries and disease but also in the localization of foreign bodies and as an aid to their surgical removal. During the war large numbers of physicians became familiar with the possibilities of roentgen diagnosis in the hands of experts, and at its close there was great increase in the use of the radiologic examination ughout the United States. In World War II the of chemotherapy and the advances made in surgical nic reduced to a considerable extent the necessity for accurate localization of foreign bodies in the forward station hospitals. The principal value of the roentgen examination was in the large base hospitals and in the induction centers. The photofluorographic method made possible the roentgen examination of the chest in all candidates for induction into the armed forces, and as a result many persons unfit for military service were eliminated and a significant saving in health and money was accomplished. The data obtained from the examination of such large numbers of young men and women are also of considerable scientific value.

CONTRIBUTIONS TO MEDICAL EDUCATION

Teachers in the various branches of medicine began to use lantern slides made from roentgenologic plates to illustrate their lectures before 1900. That this method of presentation of material is of great value is shown by the rapidity with which it was accepted and by its almost universal use today not only in teaching but also in the presentation of scientific papers.

Organized teaching in radiology was of somewhat slower development. Its position as a medical specialty was questioned, and there was doubt in the minds of educators as to its importance in undergraduate teaching except when closely integrated with medicine in general. It was not until the need for graduate teaching in the specialties began to be recognized that the medical schools gave the teaching of radiology by a radiologist a place in their curriculums. The idea that undergraduate teaching should lay the foundation for the practice of medicine and that skill in the various specialties should be obtained by means of organized teaching and training after graduation has now been generally accepted. The establishment of an examining board in each medical specialty has done much to raise the standard of practice and has stimulated the growth of better graduate teaching. Radiology was among the first of the specialties to establish hospital residencies and to recognize the importance of a thorough knowledge of the basic sciences.

CONTRIBUTIONS TO ORGANIZED MEDICINE

The American Roentgen Ray Society was founded in 1900, the Radiological Society of North America in 1916, the American College of Radiology in 1923, the Section of Radiology of the American Medical Association in 1921 and the American Board of Radiology in 1934. In addition to the national organizations there are local organizations in nearly every state and in several of the large cities. The American Roentgen Ray Society and the Radiological Society of North America each publish a monthly journal of high quality, and the American College of Radiology has been a leader in the establishment of better relations between the hospital, the public and the medical profession.

Radiology like surgery is becoming a hospital specialty. The modern roentgen laboratory requires a considerable capital expense, and unless it can be used to capacity the cost per patient is beyond that which the average patient is able to pay. Furthermore, the number of nonambulatory patients is continually increasing. The answer to the problem seems to be either hospital or group practice. The examination and treatment of a large number of paying patients in a hospital clinic has created a situation in the hospital-physician relation which did not exist when the large hospitals were concerned only with patients unable to pay for medical services. Gradually, through the efforts of organized medicine, the conclusion has been reached that the interests of the patient are best served when medical fees are not divided between the physician and the hospital. In the working out of this problem and in its practical application, radiology has played an important part.

CONCLUSION

As one of the older radiologists, one who has seen radiology develop throughout the fifty years of its existence I cannot resist the temptation of making some predictions as to its future. Like surgery and other specialties requiring extensive laboratory facilities, its practice, even to a greater extent than at present, will be carried out in the hospital. Since progress in any field of human endeavor is dependent on the character and ability of the young men and women who choose it as their life work, radiologists must see to it that opportunity for interesting and remunerative work in their specialty is afforded. A wise and cooperative attitude on the part of the hospital administration and of the medical school can do much to assure the continuation of progress in radiology. The use of irradiation in the treatment of disease is becoming more limited and with the discovery of new methods for the treatment of cancer may become still more restricted. Advance in roentgen diagnosis, however, is as great as at any time in its history, and there is every indication that it will continue. Many problems are still unsolved, and the young physician entering this field should find an excellent opportunity for productive work.

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[34] Chadwick, H. D.: Ten-Year Program for Children: Progress and Plans, New England J. Med. **200**: 1154, 1929.

[35] Potter, H. E.: Roentgenography of Pulmonary Tuberculosis with New Method for Group Surveys, Minnesota Med. **21**: 763, 1938.

[36] Bevor, W. C.: Working of Roentgen Ray in Warfare, J. Roy. U. Serv. Inst. **42**: 1152, 1898.

HYPERTROPHIC PYLORIC STENOSIS

A Follow-Up Study

R. M. BENDIX, M.D.
and
H. NECHELES, M.D., Ph.D.
Chicago

The cause of hypertrophic pyloric stenosis is unknown. The number of theories about its cause, most of them vague and none accepted generally, attest to this. Our interest in the problem of the etiologic basis of this disease was aroused by seeing an adult with active peptic ulcer, who had undergone a Rammstedt operation as an infant. Since both hypertrophic pyloric stenosis and duodenal ulcer may be related to autonomic imbalance, the idea suggested itself that if we could analyze a number of similar cases, studying the patients as well as their families, we might learn about factors predisposing to this disease; in other words, if an autonomic imbalance exists in an infant with hypertrophic pyloric stenosis it may manifest itself later in life in one or another form.

Our data on patients and their families were obtained by direct contact with the patients or their physicians and by a questionnaire. A total of 20 histories were obtained. We consider that the information about these patients and their families warrants the following report.

Most subjects have been patients in our Children's Hospital (Sarah Morris) and had been operated on in our department of surgery. The surgical technic was the A. A. Strauss modification of the Rammstedt operation.[1] Three subjects not included in the tables are white male infants, 2 of whom died at the ages of 6 weeks and 10 months, respectively, and 1 of whom is living and well. They are mentioned here only for the percentage sex distribution of the disease and for data on family background. The data on the adult subjects are presented in table 1. Seventeen subjects are adults between 18 and 28 years of age, with an average age of 21¼ years. Four subjects are women (20 per cent) and 16 men (80 per cent). Two subjects are brothers, and 2 are female twins.

Two male subjects have active duodenal ulcer which have been sufficiently severe to require hospitalization and treatment for years in the free clinics (cases 1 and 2). Another male patient has typical ulcer syndrome without roentgenologic evidence of ulcer (case 3). This subject gives the impression of ulcer "constitution"; he is a highstrung, conscientious, hard-working, worrying, introverted young man, thin and underweight. A year ago he had a typical attack of grand mal. Patients 6 and 7 are twin sisters. Their weights at birth were 4 pounds 11 ounces (2,127 Gm.) and 4 pounds 3 ounces (1,900 Gm.), respectively, and both sisters are definitely underweight now. They are highstrung and have elevated basal metabolic rates. Patient 6 was unable to finish eighth grade in grammar school.

All adult patients comment on the fact that they suffered from no immediate or late effects of the Rammstedt operation. None of them, except those with ulcer symptoms in later life, ever suffered from upper abdominal distress. In the series of 17 adults only 4 (24 per cent, 1 woman and 3 men) described themselves as of stable nervous habitus (cases 14 to 17) and without complaint or disease. Of the 4, 3 are of normal weight and 1 is overweight; the brother of the latter (case 14) is of normal weight. Of the 17 adults, 7 are underweight, 8 are of normal weight and 2 are overweight. A summary of the medical histories of the adult subjects is presented in table 2.

TABLE 1.—*Follow-Up of Patients with Previous Rammstedt Operation*

Case; Sex	Present Age, Yrs.; Weight*	Present Condition	High-strung, Unstable, Irritable	Family Background
1 ♂	25 U	Duodenal ulcer	+	
2 ♂	21 U	Duodenal ulcer	+	Father and 1 brother have peptic ulcer
3 ♂	23 U	Ulcer syndrome, grand mal	+	Mother has migraine and hypertension
4 ♀	25 N	Migraine; constipated; cannot relax	+	Father had mental disease followed by Parkinson's disease; brother has migraine
5 ♂	20 N	Allergy	+	Father has migraine, allergy, spastic colon; mother has migraine and allergy
6† ♀	18 U	B. M. R. +14%	+	Father has migraine
7† ♀	18 U	B. M. R. +28%; very slow mentally	+	Father has migraine
8 ♂	28 U	Extremely low blood pressure	+	2 daughters with pyloric obstruction; father has mucous colitis; mother has migraine, nervous disease and constipation; father, mother and sibling have extremely low blood pressure
9 ♂	25 U	Constipated, with bleeding hemorrhoids; nervous skin disorder	+	Father, mother and sister constipated
10 ♂	23 O	Constipated, frequent gas pains	+	Mother died of tuberculosis
11 ♂	23 N	Blood in stools recently	+	Father and sister have ulcer syndrome; uncle has schizophrenia; grandfather had gallbladder disease
12 ♂	23 O	....	+	
13 ♂	18 N	....	+	Father and father's brother had penetrating ulcers, and each of them had a gastroenterostomy; father died from perforation and hemorrhage of ulcer; mother since childhood suffered from intolerance to starches and fats; had convulsions and fainting spells since the age of 10; she is in the hospital now with nontropical sprue
14‡ ♂	27 N	....	Stable	Father has spastic colon
15‡ ♂	21 O	....	Stable	Father has spastic colon
16 ♂	23 N	....	Stable	
17 ♀	21 N	....	Stable	

* N signifies normal weight; U, underweight, and O, overweight.
† Twins. ‡ Brothers.

The histories of the families of 10 of our subjects yield the following data. Subject 1, with active duodenal ulcer, reports that his father and one brother are suffering from chronic peptic ulcer. Patient 3, a medical intern, reports that his father and sister suffer from the ulcer syndrome. The father and uncle of patient 13 suffered from severe complicated ulcers. The mother and the maternal grandmother of one of the infants previously mentioned suffer from ulcer syndrome and from constipation.

Migraine is another disease well represented in this group. The following members are afflicted:

From the Departments of Gastro-Intestinal Research and Surgery of Michael Reese Hospital.

Aided by a grant from the A. B. Kuppenheimer Fund. The department is in part supported by the Michael Reese Research Foundation.

Dr. L. S. Reavley, Sterling, Ill., provided the data on patients 6 and 7; Drs. Jacob Meyer and A. Bernstein, Chicago, the data on patient 2. Dr. Isaac Abt gave information about many of the patients.

[1] Abt, I. A., and Strauss, A. A.: Clinical Study of Two Hundred and Twenty-One Operated Cases of Hypertrophic Congenital Pyloric Stenosis, M. Clin. North America 9: 1305, 1926.

mother of patient 3, a brother of patient 4, the father and mother of patient 5 (they have allergy in addition), the father of the female twins (cases 6 and 7) and the mother of patient 8. The mother of patient 13 is suffering from convulsions, intolerance to foods and. recently, from nontropical sprue.

Mucous or spastic colitis is present in the father of subjects 5, 8, 14 and 15. Of other symptoms related to *nervous mechanisms we may mention: extremely* low blood pressure of entire family (case 8), hypertension (case 3), mental disease of the father (case 4) and schizophrenia of the uncle (case 11). One male subject (case 8) 28 years of age had two daughters who had pyloric obstruction in their infancy; this may have been pylorospasm, since operation was not necessary.[2] A summary of the diseases in families of the adult subjects is presented in table 3.

COMMENT

We are dealing with a group of subjects selected for the occurrence of hypertrophic pyloric stenosis and the Rammstedt operation. Most of the adults are living now in different villages, cities and states and under widely varying economic and social situations. In this group it appears that the incidence of peptic ulcer and of ulcer syndrome (18 per cent), of body weight below normal (41 per cent) and of highstrung and unstable persons (77 per cent) is above the average incidence of such conditions in the members of the general population.

TABLE 2.—*Summary of the Medical Histories of the Adult Subjects*

Condition	Subjects	
	Number	Percentage
Peptic ulcer and ulcer syndrome	3	18
Normal weight	8	47
Underweight	7	41
Overweight	2	12
Stable	4	24
Irritable, highstrung, unstable	13	77
Thyroid deficiency	2	12
Allergy	1	6
Epilepsy	1	6

TABLE 3.—*Summary of Disease Incidence in the Families of Ten Subjects*

Disease	Incidence
Peptic ulcer or ulcer syndrome	8
Migraine	6
Allergy	2 or 3
Spastic colon	3
Pylorospasm	2

Since hypertrophic pyloric stenosis may be a disease which has its beginnings during embryonic life,[3] the data on the families of our subjects are of interest. These data are incomplete, since a number of the subjects do not know of the whereabouts or the condition of a number of close relatives. The diseases tabulated in table 3 are attributed by many to disorders in the autonomic nervous system. The incidence of these diseases in the families of our subjects and the multiple occurrence in one member of the family of a number of such disturbances seems to be high. It is possible therefore, that nervous disturbances in the parents play a role in the formation of the hypertrophic pylorus in the embryo or in the infant. A review of the pertinent references in the literature[4] reveals that most hypotheses on the etiologic basis of this disease center around nervous disturbances. The following theories have been assumed to prove that a disturbance in the autonomic nervous system plays a role in the causation of hypertrophic pyloric stenosis:

1. The disease is frequently seen in children who later show allergic tendencies.
2. The predilection of the disease for males suggests an origin in the sympathetic nervous system, because the male is more susceptible to peptic ulcer than the female.
3. There is a congenital lack of stability in the balance between gastric and pyloric contraction and relaxation; a disturbance in innervation of the stomach leads to contraction instead of relaxation when food reaches the antrum.
4. An abnormal arrangement of the neuromuscular mechanism of the pylorus leads to continuous activity and consequent hypertrophy of the sphincter.
5. Preexisting pylorospasm, due to abnormal reflex disturbances or local irritation, causes edema of the pyloric mucosa.
6. Hypofunction of the adrenal gland during the first few weeks of life causes vagotonia.

None of these theories have been proved, and no valid experimental production of hypertrophic pyloric stenosis has been reported. Results of experiments on rats have been interpreted as involving a vagus mechanism in hypertrophic pyloric stenosis.[3] Albino rats kept on a vitamin B deficient diet had litters of which 1.2 per cent exhibited an enlarged stomach and gastric retention. When the young animals were kept on a similar diet, 22 per cent of their offspring showed the same condition. The vagi of the sick animals showed myelin degeneration. In some of these rats there developed polyneuritis. These observations indicate that the animals did not have hypertrophic pyloric stenosis but were afflicted with beriberi. It has been reported that following the administration of dessicated yeast to pregnant women no case of hypertrophic pyloric stenosis was observed over a period of five years.[3] Against this stands the fact that hypertrophic pyloric stenosis does not spare the families of wealthy persons who have an ample diet rich in vitamins. Furthermore, we have been informed that hypertrophic pyloric stenosis does not occur in Filipinos, among whom beriberi is frequent, and that the only cases of hypertrophic pyloric stenosis observed in Manila were in white children or in children of mixed parentage.[5]

Aside from the theories quoted, there are a number of observations which may serve as a basis for further studies on the causative factors in hypertrophic pyloric stenosis:

1. It is an undisputed fact that the disease occurs predominantly in the male infant. This may indicate that hormonal disturbance exists in the mother (antepartum) or in the infant, which may *affect the autonomic nervous system.*
2. After the Rammstedt operation the pyloric tumor disappears; when a gastroenterostomy has been performed, or when a child with hypertrophic pyloric stenosis is not operated on, the tumor persists. We have been informed that in Copenhagen, Denmark, the Rammstedt operation is not performed. Infants with hypertrophic pyloric stenosis are treated with atropine in rather large doses; they are given a semisolid diet with careful feeding and nursing care. No deaths have been

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[2] A case of a perforated, bleeding duodenal ulcer in an infant and of hypertrophic pyloric stenosis in another infant of the same family has been reported by Bird, C. E.; Limper, M. S., and Mayer, J. M.: Surgery in Peptic Ulceration of Stomach and Duodenum in Infants and Children, Ann. Surg. **114:** 526, 1941.

[3] Romano, S. A., and McFetridge, E.: The Essential Considerations of Congenital Hypertrophic Stenosis, Internat. S. Digest **25:** 131, 1938.

[4] (*a*) Ladd, W. E., and Gross, R. E.: Abdominal Surgery of Infancy and Childhood, Philadelphia, W. B. Saunders Company, 1941. (*b*) Ladd, W. E.; Ware, P. F., and Pickett, L. K.: Congenital Hypertrophic Pyloric Stenosis, J. A. M. A. **131:** 647 (June 22) 1946. (*c*) Romano and McFetridge.[3]

[5] Quintos, F. X.: Oral communication to the author.

recorded with this form of treatment, and complete recovery and normal growth of the patients has ensued.[6]

3. We have observed a seemingly high incidence of disturbances in adults on whom a Rammstedt operation was performed in their infancy and in the next of kin of these adults. Not infrequently there is a familial incidence of the disease.

The foregoing observations evidently do not answer the question of the origin of hypertrophic pyloric stenosis, but they may be helpful in the approach to a solution of the problem.

We do not believe that the Rammstedt operation involves a complete denervation of the pyloric sphincter. The nature of the operative procedure and the innervation of the sphincter make a complete denervation hardly plausible. However, the splitting of the circular muscle of the sphincter leads to a regression of the tumor. Abt and Strauss[1] and Ladd and Gross[4a] have commented on the fact that complete splitting of the muscle insured better results, particularly less postoperative vomiting, than incomplete splitting. The sectioned circular musculature seems to lose its power for concentric contraction and seems to undergo atrophy of disuse.

Our own observations point in the direction of autonomic and nervous lability in our patients and in their next of kin. Such symptoms as peptic ulcer and ulcer syndrome, nervous instability, migraine and spastic colon are considered by many to be due wholly or in part to disturbances in the autonomic nervous system. We are unable to offer statistical comparison with a normal segment of the population, but the incidence of these symptoms and diseases in both the patients and their families seems unduly high.

Why, then, is there a localization of a nervous imbalance in one organ, the pyloric muscle? A tentative hypothesis may be offered from the considerations already raised. A disturbance may localize and become more serious in an imbalanced organism than in a balanced organism, when a local irritating process is present. The embryo swallows meconium, cell detritus and possibly hair, with amniotic fluid. One or the other of these substances may so irritate the sphincter that edema, spasm and consequent enlargement result. It has been shown in this laboratory that meconium is a rather irritating substance.[7] However, it is an open question why this process should occur in the male predominantly, unless it can be shown that the male infant is more prone to have an autonomic imbalance that is the female infant.

SUMMARY

A follow-up study was conducted on persons who had undergone the Rammstedt operation for hypertrophic pyloric stenosis in their infancy. The families of a number of these persons also were investigated.

The age of the persons who had had a Rammstedt operation varied between 18 and 28 years, with an average age of 21¼ years. One pair of female twins and 2 brothers were in this series. The incidence of disturbances, mainly nervous ones, was high in both the group of patients who had had the Rammstedt operation and the group of close relatives of these patients.

A tentative theory is submitted, that hypertrophic pyloric stenosis is due to an autonomic imbalance plus a local irritation during embryonic life.

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[6] Christiansen, T.: Oral communication to the author.

[7] Rubovitz, W. H.; Taft, E., and Neuwelt, F.: The Pathological Properties of Meconium, Am. J. Obst. & Gynec. 36: 501, 1938.

KERATITIS ASSOCIATED WITH LYMPHOGRANULOMA VENEREUM

HAROLD G. SCHEIE, M.D.
Assistant Professor of Ophthalmology, Hospital of the University of Pennsylvania and Medical School, University of Pennsylvania
Philadelphia

ALAN S. CRANDALL, M.D.
Salt Lake City

and

WERNER HENLE, M.D.
Associate Professor of Virology and Pediatrics, Children's Hospital of Philadelphia and Department of Pediatrics, School of Medicine, University of Pennsylvania
Philadelphia

I. INTRODUCTION

Five patients having keratitis probably pathognomonic of lymphogranuloma[*] venereum are herewith reported. The appearance of the corneal lesions was identical in each patient. The lesions were also the same as that reported by Meyer and Reber[1] in 1940 in 1 patient, who was observed by one of us (H. G. S.) at that time. Ocular involvement is one of many manifestations of lymphogranuloma venereum, which is a widespread systemic disease. Inguinal involvement has been recognized for over a century, but it was not until the work of Durand, Nicolas and Favre[2] in 1913 that the disease was established as a specific entity. Knowledge of the complex nature of the disease and the numerous lesions produced by it awaited discovery of the Frei test[3] (1925) and the means of isolating the specific virus by Hellerström and Wassén[4] (1930).

II. INCIDENCE OF LYMPHOGRANULOMA VENEREUM

The distribution of lymphogranuloma venereum is worldwide; it is especially prevalent in the tropics. Three hundred patients were seen at the 20th General Hospital during the first twenty-eight months of its assignment in India. Koteen[5] quoted statistics from outpatient clinics of large hospitals as revealing that 20 to 40 per cent of Negroes and 2 to 5 per cent of white patients are or at one time have been infected.

III. GENERAL CLINICAL PICTURE

The clinical picture of lymphogranuloma venereum manifests itself in many ways. The primary involvement consists of a transient herpetiform or ulcerative lesion on the genitalia which appears after an incubation period of only a few days. This usually escapes notice. Invasion of the inguinal lymph nodes draining the area of inoculation usually occurs within ten to thirty days after infection. Inguinal lymphadenitis is therefore commonly the first manifestation of the disease. Constitutional symptoms, consisting of malaise, headache, fever and other grip-like signs, may be observed concurrently. The lymph nodes usually suppurate and form buboes. Involvement of other organs may occur at this time or only after a latent period

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[*] Read before the Section on Ophthalmology at the Ninety-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., June 11, 1947.

[1] Meyer, G. P., and Reber, J.: A Case of Corneal Ulcer Associated with Lymphogranuloma Venereum, Am. J. Ophth. 24: 161 (Feb.) 1941.

[2] Durand, M.; Nicolas, J., and Favre, M.: Lymphogranulomatose inguinale subaiguë d'origine génitale probable, peut-être vénérienne, Bull. et mém. Soc. méd. d. hôp. de Paris 35: 274, 1913.

[3] Frei, W.: Eine neue Hautreaktion bei Lymphogranuloma Inguinale, Klin. Wchnschr. 4: 2148, 1925.

[4] Hellerström, S., and Wassén, E.: Meningo-enzephalitische Veränderungen bei Affen nach Intracerebraler Impfung mit Lymphogranuloma Inguinale, Verhandl. internat. Kong. Dermat. u. Syph., 1930, p. 1147.

[5] Koteen, H.: Lymphogranuloma Venereum, Medicine 24: 1, 1945.

of months to years. Many different lesions have been reported associated with lymphogranuloma venereum, but evidence in support of such diagnoses has varied greatly. Koteen therefore classified the lesions said to be due to lymphogranuloma venereum into three groups:

- A. Lesions from which the virus has been recovered
  1. Primary genital lesions
  2. Inguinal buboes
  3. Esthiomene
  4. Urethritis
  5. Cervicitis
  6. Anorectal syndrome
  7. Conjunctivitis
  8. Meningitis
- B. Lesions from which the virus has not been recovered, but in which the supporting evidence is good
  1. Ulcerative colitis
  2. Salpingitis and parametritis
  3. Dermatologic manifestations
  4. Joint and bone infections
  5. Cervical and axillary adenitis
  6. Tongue and lip "chancres"
- C. Those in which the supporting evidence is only circumstantial
  1. Pharyngitis and tonsillitis
  2. Enteritis
  3. Ocular lesions other than conjunctivitis

IV. LABORATORY

The clinical signs of lymphogranuloma venereum can be supported by various laboratory tests which offer confirmatory or even final proof of the diagnosis.

A. Frei Test.—The Frei test, in which a reaction is elicited by injecting lymphogranuloma venereum antigen intradermally, is the most commonly used. The antigen is prepared from tissue infected by the lymphogranuloma virus and contains the inactivated virus itself. Once the patient has had lymphogranuloma venereum and Frei reaction has become positive, it probably remains so. False positive reactions are parently rare. Koteen stated that a repeatedly negative Frei reaction in a patient suspected of having lymphogranuloma venereum is reasonably strong evidence of the absence of this disease, except in those few patients who exhibit anergy. On the other hand, a positive reaction to the Frei test only implies that the patient has at some time been infected with the virus.

B. Complement Fixation Test.—The complement fixation test is helpful, though numerous cross reactions can occur, among which are psittacosis, syphilis, trachoma, atypical pneumonia, inclusion blennorrhea and other diseases. Levine and his associates [6] felt that since so many cross reactions could be demonstrated this procedure must be corroborated by a positive Frei reaction before the diagnosis of lymphogranuloma could be made.

C. Biopsy.—Biopsy of the lesion may reveal intracellular inclusion bodies which are suggestive of the diagnosis.

D. Recovery of the Specific Virus.—Final proof of the diagnosis is afforded by isolation of the causative agent, which can be done by injecting material from the suspected lesion into the brain of a mouse. A characteristic meningoencephalitis results. Extracts of this mouse brain, when properly treated and injected intradermally, elicit a positive Frei reaction in patients known to react positively to this test.

E. Miscellaneous Laboratory Tests.—Other laboratory findings may lend supportive evidence: 1. The white blood cell count is usually elevated, being 10,000 to 20,000. 2. The serum proteins may be elevated with increase in the globulin fraction. The level usually exceeds 8.0 Gm. per hundred cubic centimeters. 3. The sedimentation rate is commonly elevated. 4. The formaldehyde-gel test frequently elicits a positive reaction.

V. OCULAR LESIONS ASSOCIATED WITH LYMPHOGRANULOMA VENEREUM

Various ocular lesions, proved and unproved, have been reported in association with lymphogranuloma venereum. These have been well summarized by Macnie [7] and are therefore only tabulated. The ocular lesions only presumptively due to lymphogranuloma venereum (table 1) include keratoconjunctivitis, conjunctivitis, uveitis, episcleritis, peripapillary edema and flame-shaped retinal hemorrhages. The patients with proved ocular lesions from which the virus has been recovered (table 2) were 6 in number. Five of these patients had Parinaud's syndrome. The other, whose keratoconjunctivitis was reported by Oliphant and his co-workers,[8] was of particular interest in view of the observations reported herein. This patient had bulbar conjunctival injection which was followed in twelve days with a keratitis beginning as a small marginal corneal ulcer within the limbus at 12 o'clock. A few keratic precipitates were present. Experimental induction of ocular lesions has been carried out by several workers (table 3). Satani and Sano [9] (1936) and Macnie [7] (1941) inoculated the virus into the anterior chambers of rabbits and guinea pigs, producing keratitis, conjunctivitis and iritis. Inclusion bodies were noted in the tissues and studied pathologically. Levaditi [10] and co-workers reproduced Parinaud's syndrome in the chimpanzee in 1935. Conjunctivitis has been noted to occur in experimental animals following the intracerebral inoculation of the lymphogranuloma virus.

VI. REPORT OF CASES

We are reporting herein 5 patients having a type of keratitis which seems pathognomonic of lymphogranuloma venereum. In all the patients about to be discussed, the diagnosis of lymphogranuloma venereum was first suggested by the characteristics of the ocular lesion.

Case 1.—A 25 year old Chinese soldier was admitted to the 20th General Hospital on March 9, 1943 because of a hydrocele involving the left testicle. On March 12 a hydrocelectomy was performed with the patient under spinal anesthesia. On April 8 the left eye became inflamed. The severity increased, necessitating an ophthalmologic consultation on April 17. At that time examination revealed definite circumcorneal injection. A corneal infiltrate was present within the upper limbus, involving the upper third of the cornea. A massive fleshy superficial vascularization which elevated the surface of the cornea was seen extending 1.5 mm. into the cornea from the upper limbus. The appearance suggested an epaulet. Punctate staining areas were seen over the infiltrated portion of the cornea in advance of the vascularization. The cornea was thickened, particularly near the limbus, where the infiltrate involved its entire thickness. The left pupil was smaller than the right. Cells in the aqueous and an aqueous flare were present. Recalling to mind the previous case reported by Meyer and Reber of a patient with almost identical abnormalities, a tentative diagnosis of keratitis due to lymphogranuloma venereum was made. Inquiry revealed a history of buboes two years previously. Scars were seen in the right inguinal region. A Frei test elicited a positive reaction. An attempt was made to find other possible etiologic agents. Conjunctival scrapings were negative for inclusion bodies of trachoma. Cultures of the eye revealed no pathogenic organism. His Kahn reaction was negative. Routine blood cell counts were normal. No infected teeth were found. He was first given atropine 1 per cent twice daily, hot compresses and sodium sulfathiazole 2 per cent to use locally every hour. This was continued with slight improvement until April 23. He was then given sulfadiazine orally, 1 Gm. every six hours. Improvement was subsequently rapid, and his eye became quiet, permitting him

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[6] Levine, S.; Holder, E. C., and Bullowa, J. G. M.: Complement Fixation for Lymphogranuloma Venereum and for Psittacosis with Frei Reaction Among Pneumonia Patients, J. Immunol. **46:** 183, 1946.

[7] Macnie, J. P.: Ocular Lymphogranuloma Venereum, Arch. Ophth. **25:** 255 (Feb.) 1941.

[8] Oliphant, J. W.; Powell, W. F., and Perrin, T. L.: Sulfadiazine in Lymphogranuloma Venereum Ophthalmitis, J. A. M. A. **118:** 973 (March 21) 1942.

[9] Satani, Y., and Sano, J.: Experimental Studies in Lymphogranuloma Inguinale, Jap. J. Exper. Med. **14:** 523, 1936.

[10] Levaditi, C.; Schoen, R., and Reinie, L.: Reproduction experimentale de la conjonctivite lymphogranulomateuse (maladie de Nicolas et Favre) chez le chimpanze, Compt. rend. Acad. d. Sc. **203:** 828, 1936.

TABLE 1.—*Presumptive Ocular Lesions*

Date	Author	Ocular Lesions	Other Manifestations
1941	Meyer and Reber [1]	Keratoconjunctivitis	Positive Frei reaction; rectal strictures
1941	Maenle [7]	Keratoconjunctivitis, 2 cases; uveitis, 2 cases	Positive Frei reaction; rectal strictures; in 1 case with keratoconjunctivitis
1939	Ouwejan, cited by Maenle [7]	Parinaud's oculoglandular syndrome, 3 cases	Positive Frei reaction
1938	Appelmans, M.: Ophthalmologica 96:321, 1939	Fibrinous conjunctivitis in physician laboratory worker	Positive Frei reaction
1933	Cole, H. N.: J. A. M. A. 101:1069 (Sept. 30) 1933	3 cases of conjunctivitis in 37 cases	Positive Frei reaction; inguinal lesions
1936	von Haam, E., and D'Aunoy, R.: Am. J. Trop. Med. 16:527, 1936	1 case of conjunctivitis in 461 cases	Positive Frei reaction; inguinal lesions
1932	Liebreich and Gottlieb, cited by Maenle [7]	Episcleritis	Positive Frei reaction; arthritis; cutaneous rash
1931	Kitagawa, K.: J. Orient. Med 20:18, 1931	Peripapillary edema and tortuosity of retinal vessels	Positive Frei reaction; inguinal lesions
1936	Coutts, W. E.: J. Trop. Med. 39:13, 1936	Peripapillary edema and tortuosity of retinal vessels	Positive Frei reaction; inguinal lesions
1936	Kornblith, B. A.: J. Mt. Sinai Hosp. 3:24, 1936	Flame-shaped retinal hemorrhage	Positive Frei reaction; inguinal lesions

TABLE 2.—*Proved Ocular Lesions*

Date	Author	Ocular Lesions	Method of Recovery of Virus
1936	Levaditi, C.; Bollack, J.; Basch, G., and Desvignes, P.: Bull. Soc. franç. de dermat. et syph. 43:1258, 1936	Parinaud's syndrome	Virus from draining node of Parinaud's caused encephalitis in monkey; transferred to mouse; mouse brain antigen gave positive Frei reaction
1936	Bollack, J.; Basch, G., and Desvignes, P.: Bull. Soc. d'opht. de Paris, 1936, p. 109	Parinaud's syndrome	As above
1937	Ichijo, cited by Maenle [7]	Parinaud's syndrome (2 cases)	Antigen from ocular secretion gave positive Frei reaction
1937	Hashimoto, T.; Takenouchi, J., and Ichidyo, M.: Jap. J. Dermat. & Urol. 42:46, 1937	Parinaud's syndrome (1 case)	As above
1940	Curth, W.; Curth, H. O., and Sanders, M.: J. A. M. A. 115:445 (Aug. 10) 1940	Parinaud's syndrome	Intracerebral inoculation of portion of conjunctiva into monkey produced conjunctivitis; intracerebral inoculation of conjunctival washing of monkey into mouse; mouse brain antigen gave positive Frei reaction
1941	Oliphant, Powell and Perrin [8]	Keratoconjunctivitis in laboratory worker	Intracerebral mouse inoculation with conjunctival washings; mouse brain antigen gave positive Frei reaction

TABLE 3.—*Experimental Ocular Lesions*

Date	Author	Ocular Lesions	Method of Inoculation
1924	Hansmann, G. H.: Surg., Gynec. & Obst. 39:72, 1924	Panophthalmitis in a rabbit's eye	Intraocular injection of material from a bubo
1923	Gamna, C.: Arch. di patol. e clin. med. 3:305, 1924	No lesion produced in the eyes of rabbits	Inoculation into anterior chamber from an enlarged gland of a patient with lymphogranuloma venereum
1936	Levaditi, Schoen and Reinie [10]	Lesion resembling Parinaud's oculoglandular syndome in a chimpanzee's eye	Subconjunctival injection of the lymphogranuloma venereum virus
1935	Miyagawa and others [11]	Occasional iritis in rabbit's eye	Inoculation into anterior chamber of lymphogranuloma venereum virus
1936	Satani and Sano [9]	Keratitis, conjunctivitis, iritis, in eyes of rabbits and guinea pigs; inclusion bodies	Inoculation of anterior chambers; aqueous then transferred to mice; mice showed symptoms; antigen from brain gave positive Frei reaction
1936	von Haam, E., and Hartwell, R.: J. Trop. Med. 39:190, 1936	Conjunctivitis in white mice, ferrets, cats, sheep and calves	Intracerebral inoculation of the lymphogranuloma venereum virus
1938	Findlay, G. M.: Tr. Roy. Soc. Trop. Med. & Hyg. 31:587, 1938	Iridocyclitis and corneal opacity in the eyes of rabbits	Inoculation of material from infected lymph node into anterior chamber
1938	Cottini, G. B.: Riforma med. 54:901, 1938	Purulent conjunctivitis in the eyes of mice	Intracerebral inoculation from a bubo: virus again transmitted from eyes in which conjunctivitis developed
1941	Maenle [7]	Keratitis, conjunctivitis and iritis in the eyes of rabbits	Inoculation of anterior chambers; aqueous transferred intracerebrally to mice; also to tissue culture; antigen from mouse brain and tissue culture gave positive Frei reaction

to be discharged from the hospital three weeks later. Only a small opacity remained at the upper limbus.

Case 2.—A 32 year old Negro soldier was admitted to the outpatient department of the 20th General Hospital on June 25, 1943. He had mild conjunctival injection, but no corneal involvement could be noted. During the next three days his eye became progressively inflamed and mild ciliary flush developed. An infiltrate appeared within the upper limbus. Punctate areas within the upper limbus stained with fluorescein over the infiltrated area. He was therefore admitted to the hospital as a ward patient on June 28. The ocular condition became more severe. The injection increased and the infiltrate became more pronounced, involving the entire corneal thickness at the limbus. The involved cornea was thickened. Within ten days superficial vascularization began to appear within the upper limbus, which shortly became salmon colored or fleshy in appearance and was again elevated, resembling an epaulet (fig. 1). All routine etiologic studies including exclusion of foci of infection were negative in result. At this time, the appearance of the corneal lesion again suggested the diagnosis of lymphogranuloma venereum. Investigation revealed scars of buboes from which he had suffered three years previously. Trachoma was again excluded. Two different Frei tests elicited positive reactions, so that a presumptive diagnosis of keratitis due to lymphogranuloma venereum was made. Sulfadiazine was then administered, 1 Gm. every four hours. Atropine and hot compresses, which he had been receiving, were continued. Complete recovery resulted during the next three weeks with no visual loss.

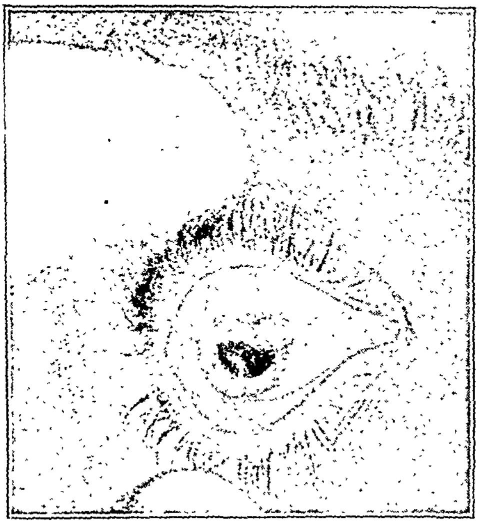

Fig. 1.—Keratitis associated with lymphogranuloma venereum (case 2).

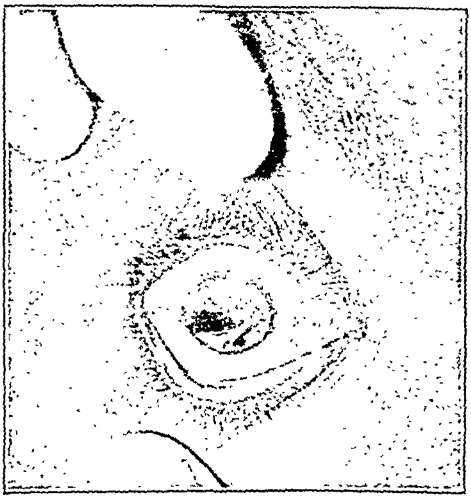

Fig. 2.—Keratitis associated with lymphogranuloma venereum (case 3).

Case 3.—On March 10, 1945, a 21 year old Negro soldier was admitted to the 20th General Hospital, where he was placed under the care of the venereal disease section. He gave a history of exposure during November to a native prostitute in Calcutta. A primary lesion had never been noted, but he was admitted to the 70th Field Hospital on Jan. 26, 1945 because of swelling in his right groin. He was given inadequate doses of sulfathiazole for eight days with some regression of the swelling. About the middle of February, or three weeks prior to admission to the 20th General Hospital, he experienced discomfort in his right eye with considerable inflammation and redness. On admission to the section on venereal disease of the 20th General Hospital on March 10, in addition to the inflamed eye, he was found to have swollen, tender, matted inguinal lymph nodes on the right side. He had some scars over his back and chest, suggesting a possible macular eruption due to syphilis. The diagnosis of secondary syphilis was considered the most likely possibility. Ophthalmologic consultation was requested, and examination revealed moderate conjunctival injection with superimposed ciliary flush involving the right eye. From 9:30 to 3 o'clock there was an area of corneal opacity (fig. 2). This ran in an arc within the limbus, extending 4 mm. into the cornea at its center. The infiltrate involved the entire thickness of the cornea peripherally, but gradually became superficial centrally. A profuse superficial vascularization extended from the limbus to within 1.5 mm. of the advancing border of the infiltrate. As in the other cases, vascularization was profuse and elevated the surface of the cornea, suggesting an epaulet. Multiple punctate staining areas could be seen in advance of the vascularized portion. A few scattered macular and nebular opacities were seen still further centrally in the cornea, all being superficial. A faint aqueous flare with a moderate number of floaters was seen. The fundi were normal. The diagnosis of keratitis due to lymphogranuloma venereum was immediately suggested. Subsequent studies revealed no other causes for the keratitis. Serologic reactions of his blood were negative. Repeated Frei tests elicited positive reactions. The serum proteins were within normal limits and the albumin-globulin ratio was normal. On March 13 he was started on sulfathiazole, 1 Gm. four times daily by mouth. Response to treatment was poor. The lesion was only converted from acute keratitis into a more indolent chronic affair.

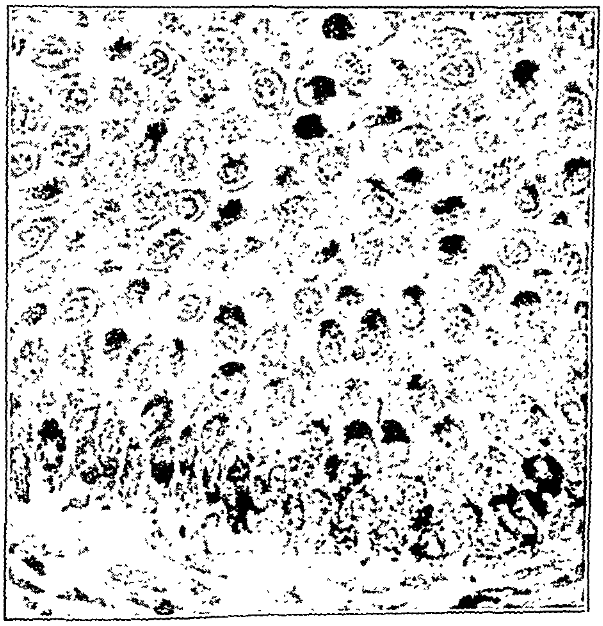

Fig. 3.—Photomicrograph demonstrating intracellular inclusion bodies (case 4).

On April 12 a similar infiltrate began to develop within the lower limbus. Administration of sulfathiazole was continued for nine weeks with little effect. He was then given three weeks of intramuscular penicillin therapy, also without benefit. At this point the patient was transferred back to the zone of the interior and could no longer be followed. Visual loss from corneal opacity was almost a certainty.

Case 4.—A 26 year old Negro woman came to the ophthalmology outpatient department of the Hospital of the University of Pennsylvania on April 3, 1945. She complained of a painful left eye of about three months' duration. Vision of the right eye was 6/6 and of the left eye 6/12 The right eye showed no abnormalities. The conjunctiva of the left eye was injected. In the region of the upper limbus a fleshy, vascular growth was seen extending onto the cornea It had the appearance of an epaulet overriding the limbus and involved the upper two fifths of the cornea. The cornea was infiltrated and showed punctate staining with fluorescein in advance of the vascularized area. No flare or floaters were seen, but several small pigmented keratic precipitates were present. The patient was admitted to the ward for study. Culture from the conjunctiva revealed no growth. No cause could be found by routine studies, including search for foci, tuberculin and brucellergin tests, roentgen studies and various consultations. At this time a diagnosis was not made. Neoplasm was considered. She was followed as an outpatient for a month, during which time the eye gradually became worse. The limbal growth further invaded the cornea, and several superficial corneal infiltrates developed within the lower limbus. At this time, May 7, the resemblance to the previously observed cases was noted and lymphogranuloma venereum was supected. Accordingly, a Frei test was done, and the reaction was found to be strongly positive. No other stigmas of lymphogranuloma venereum were found. She was given sulfadiazine to take by mouth as an outpatient. She then disappeared for three months. When she was induced to return for follow-up, on August 20, she stated that after she had taken the sulfadiazine for a short time the eye became so much better that she did not bother to report for follow-up. By this time the corneal infiltrate had increased within both the upper and the lower limbus, so that there was only a small irregular horizontal clear area at the center of the cornea. However, the injection was less and the vascularized tissues overriding the limbus above had flattened out. The lesion at the lower limbus now showed epaulet-like vascularization and an identical appearance to the cornea within the upper limbus. The patient refused further treatment and did not attend the clinic for six months, at the end of which time the eye had again become uncomfortable. The corneal opacification had increased, the eye showed a ciliary flush and an aqueous flare was present. She consented to readmission to the hospital on Feb. 21, 1946 for further treatment. Her Frei reaction was again strongly positive. Her sedimentation rate was moderately increased. She had hyperproteinemia, the value being 8.2, with an albumin-globulin ratio of 4.7 to 3.5. During this admission a biopsy of the corneal lesion at the upper limbus was taken for microscopic examination and mouse brain inoculations. She requested release from the hospital after two weeks because of difficulties at home. She was therefore again given sulfadiazine to take orally at home. After leaving the hospital her eye again became considerably worse until she was finally readmitted, on March 21. Her vision in the affected eye had been reduced to counting fingers because of infiltrate and vascularization throughout the cornea. She was immediately given sulfadiazine combined with fever therapy in the form of typhoid vaccine intravenously. After three weeks on this regimen the cornea no longer stained with fluorescein and the eye was whiter. Improvement continued and the eye became entirely quiet during the following three weeks. She was last seen on April 23, 1947. The eye was quiet. Numerous corneal maculas were seen which were mostly superficial but which kept her vision at 6/60. Remnants of superficial and deep vessels were seen in the cornea within the limbus above and below, signifying that deep as well as superficial vascularization occurred when the keratitis was active. Although they were not seen while the keratitis was active, the finding of deep ghost vessels was not surprising, since all layers of the cornea are involved by the keratitis.

Microscopic study and virus inoculation experiments were carried out by one of us (W. H.). Pathologic study revealed many cytoplasmic inclusion bodies in the epithelial cells of the section (fig. 3). This consisted of aggregations of small round bodies, 200 to 300 microns in diameter, which stained dark purple with Giemsa stain. In many places individual particles or small groups of these particles were found. They probably represent the elementary bodies of the lymphogranuloma virus as first fully described by Miyagawa,[11] who called them granulocorpuscles. Serologic studies using the patient's serum were also performed. A complement fixation test with chick embryo antigen ("lygranum") elicited a positive reaction in a very high dilution, giving a serum antibody titer of 1 to 256. The antigen used was the same material which was employed for the Frei test. Extensive studies have been carried out in an attempt to isolate the causative agent. Intracerebral injection into white mice was the first step. In the first mice no lesions developed. On the twelfth day they were killed, their brains emulsified and injected into new mice. Again no lesions developed, so that this line of approach was discontinued. A second attempt was made on chick embryo. Material remaining from the biopsy which had been kept at — 10 C. was injected into the yolk sac of 8 day old chick embryos. They survived eight days of further incubation and were harvested. A 20 per cent suspension was passed to new eggs and also to white mice by the intracerebral route. These mice showed some signs of cerebral lesions on the fourth and fifth days. They lost weight and on suspension by their tails exhibited tremor. When released, they had difficulty in regaining equilibrium. Passage of the brains from these mice to other mice produced severe lesions and death. At first it was felt that we were dealing with a virus of the lymphogranuloma venereum group, but further studies have shown that it undoubtedly was a contaminant.

Case 5.[12]—A 31 year old Negro soldier was admitted to Valley Forge General Hospital on April 10, 1947 because of inflammation of his right eye of four weeks' duration. He had received no treatment during this time. His vision was 20/100 in the right eye and 20/30 in the left. This could be improved to 20/30 in the right eye with a pinhole disk. External examination of his right eye revealed slight edema of the upper lid. A mild ciliary flush was present. Areas of keratitis, rather heavily vascularized superficially, could be seen within the upper and lower limbus. External examination of the left eye revealed no abnormality. With the slit lamp an area of corneal infiltrate involving the entire thickness of the cornea was seen within the upper limbus from 10 to 2 o'clock above and from 4 to 8 o'clock below. These extended into the cornea about 2.5 mm. Some of the infiltrated area within the lower limbus stained in a punctate manner with fluorescein. The cornea was slightly thickened over the involved areas. Dense vascularization extended from the limbus into infiltrated portions of the cornea for about 1.5 mm. A few cells and a faint aqueous flare were seen. In the left eye a nebulous opacity involving all layers of the cornea could be seen within the upper and lower limbus in distribution corresponding to the areas of keratitis in the other eye. Within these areas, ghost vessels could be seen at all depths. The aqueous was clear. Ophthalmoscopic examination revealed normal fundi. The intraocular tension was normal. Various routine studies for the possible causation of the keratitis were carried out. Cultures by scraping of the areas of keratitis within the lower limbus revealed no growth. Conjunctival cultures enabled recovery of hemolytic Staphylococcus aureus organisms which

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11. Miyagawa, Y., and others: Studies on the Virus of Lymphogranuloma Inguinale Nicolas, Favre and Durand, Jap. J. Exper. Med. 13: 1, 331, 723 and 733, 1935.

12. We were enabled to see this patient by Jack H. Bristow, Major, Medical Corps, Chief 1st Eye, Ear, Nose and Throat Section, and Paul Lambrecht, Captain, Medical Corps, Assistant Chief, Valley Forge General Hospital.

were coagulase negative. Brucellosis agglutination reactions were negative. A tuberculin test elicited a positive reaction to 0.001 mg. Other routine studies were negative in result. During the week of May 5 the patient was seen in consultation by P. Robb MacDonald, M.D., who suggested the diagnosis of lymphogranuloma venereum on the clinical appearance of the lesion in the right eye. The vascularization, however, was not so heavy as seen in some of the cases and the appearance was that of a subsiding lesion. One of us (H. G. S.) saw the patient the following day and agreed with this impression. The opinion was also expressed that the scarring and old vascularization, some of which involved the deeper layers of the cornea of the left eye, were probably due to a similar type of keratitis involving this eye. Inquiry revealed a history of buboes involving the left inguinal region in 1933. The patient also stated that he had had an inflamed left eye during May, June and July, 1941. No diagnosis was made at the time, although he had been treated in a civilian hospital eye clinic. Because of this tentative diagnosis of lymphogranuloma venereum, a Frei test was done and found to result in a strongly positive reaction on April 25 and again on May 26. A complement fixation test elicited a negative reaction. The patient had been receiving 5 per cent sulfathiazole ointment locally every two hours and atropine 3 per cent since April 22. The eye was rapidly improving and continued to do so until May 10, when all treatment was stopped. By May 30 the eye was entirely quiet and the infiltrate as well as the vascularization was clearing.

VII. COMMENT

The 5 patients described in this paper had identical corneal lesions. The involvement began within the upper limbus in every instance. The lesion was observed in 5 patients but was followed from its onset in only 1, in whom it began as an ordinary keratoconjunctivitis localized to the region of the upper limbus. Corneal infiltrates appeared within the upper limbus, some of which stained with fluorescein. As the number of infiltrates increased they became confluent, forming an arc of infiltrate within the upper limbus involving one third to one half of the circumference of the cornea. Scattered infiltrates kept appearing just ahead of the area of keratitis as it advanced into the cornea. The entire thickness of the cornea became involved by the infiltrate at the limbus, but the process gradually became superficial centrally over its advancing border. The cornea was thickened over the involved area. A dense superficial vascularization from the limbus covered the infiltrate peripherally, with all of the vessels ending abruptly well within the advancing border of the infiltrate. The vascularization was characteristically so profuse that it elevated the surface of the cornea, somewhat resembling an epaulet. All our patients presented identical abnormalities. The corneal lesion was accompanied by a mild to a moderate iridocyclitis in all cases. An occasional keratic precipitate occurred. In 2 of the patients, as the disease ran its course, a similar infiltrate and vascularization appeared wthin the lower limbus. Another of the patients had active involvement within the upper and lower limbus when first seen and scars probably due to a similar lesion within the upper and lower limbus of the other eye. As the keratitis subsided, ghost vessels could be seen at all depths of the cornea, showing that vessels had probably come in at corresponding levels during the active stage of the infection. This finding would be expected in view of the infiltrate through all the layers of the cornea.

Definite proof that the corneal lesions were caused by the lymphogranuloma venereum virus could not be obtained, but the supportive evidence was fairly substantial. 1. The corneal lesions were identical in appearance in each patient. 2. The appearance of the corneal lesion was so characteristic that, the patient of Reber and Meyer having been seen in 1940, the diagnosis of lymphogranuloma venereum was suggested by the ocular lesion in each of the subsequent cases. 3. Confirmatory diagnostic evidence of lymphogranuloma venereum was obtained from additional clinical and laboratory studies. (*a*) All of the patients herein reported had positive Frei reactions. (*b*) Four of the patients had evidence of involvement of inguinal lymph nodes, manifest in 3 of the patients by scars of healed buboes and in the other by active lymphadenitis. (*c*) One patient (case 4) showed, in addition to a positive Frei reaction, a strongly positive complement fixation reaction. Biopsy of the corneal lesion revealed changes compatible with those of lymphogranuloma venereum. 4. This characteristic corneal lesion has, in our experience, never been seen in patients without corroborative tests of lymphogranuloma venereum.

Definite proof of the etiologic diagnosis, however, must await isolation of the causative agent. Unsuccessful attempts were made to recover the virus from the corneal lesion of our fourth patient. The large number of elementary bodies visible in the microscopic section of our biopsy implied that the virus should have been isolated with ease. On the other hand, the strongly positive complement fixation reaction indicated a high antibody level in the serum. This could have resulted in inactivation of the organism during the process of releasing the virus from the infected tissue cells. During this process, the tissues must be emulsified by grinding in a mortar with an abrasive, at which time it is impossible to avoid contact of the virus with the antibody.

The differential diagnosis includes marginal keratitis, trachoma and Mooren's ulcer. Marginal keratitis can be excluded by bacteriologic studies and by the appearance of the lesion associated with lymphogranuloma venereum keratitis, which involves the entire thickness of the cornea, is continuous with the limbus and shows an epaulet-like vascularization. Trachoma causes a bilateral lesion with much less dense vascularization of the cornea. It also produces conjunctival changes which are diagnostic. Mooren's ulcer usually occurs in older patients, is indolent and has an undermined advancing border.

Though none of the eyes in our patients was lost, the prognosis for vision is serious. One of the 5 eyes suffered marked loss of visual acuity, and it was reasonably certain that another would have permanent visual impairment, although follow-up was impossible. That the disease can be prolonged was demonstrated by our fourth patient.

VIII. TREATMENT

The treatment of keratitis associated with lymphogranuloma venereum should be that prescribed for the systemic disease. This treatment was outlined by the War Department in War Department Technical Bulletin TB Med. 157.[13] This consists of the administration of sulfadiazine orally in full therapeutic doses for a period of twenty-one days. Only 2 of our patients responded poorly to sulfonamide therapy. These had had inadequate doses or abbreviated courses of sulfonamide drugs prior to being seen by us. This would suggest either that the lymphogranuloma venereum virus had become sulfonamide fast or that this strain of virus was particularly resistant to this form of chemotherapy.

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[13] Chancroid, Lymphogranuloma Venereum, and Granuloma Inguinale, United States War Department Technical Bulletin (TB Med 157), Washington, D. C., Government Printing Office, April 1945.

IX. SUMMARY

A type of keratitis, identical in appearance, is reported in 5 patients with other evidence of lymphogranuloma venereum. Evidence supporting the diagnosis of lymphogranuloma venereum was: (*a*) A positive Frei reaction in all the patients; (*b*) involvement of inguinal lymph nodes, active in 1 patient and healed in 3; (*c*) a strongly positive complement fixation reaction in 1 patient, and (*d*) in the corneal lesion of the same patient inclusion bodies compatible with lymphogranuloma venereum shown by biopsy. Although the prognosis is serious, treatment with sulfathiazole or sulfadiazine should be carried out in full therapeutic doses for not less than three weeks.

ABSTRACT OF DISCUSSION

Dr. John P. Macnie, New York: The authors describe a keratitis of distinctive characteristics and present evidence of its association with lymphogranuloma venereum. This disease is caused by a virus which is larger than the true viruses and is a member of a group of similar viruses, in which group are included those causing psittacosis, trachoma and inclusion blennorrhea, as well as lymphogranuloma venereum. It is interesting that in this group are two diseases of the eye. Lymphogranuloma venereum is a true venereal disease, but instances of direct ocular infection as in laboratory workers have been reported. Evidence has been offered that it is at times a generalized infection, the virus having been recovered from the spinal fluid and blood of an infected person. In the laboratory the virus has been recovered from the fetuses of pregnant mice that have been inoculated with the disease. The mechanism of involvement of the corneal tissue is not clear. It would seem to be a direct infection of the tissues with the virus from the evidence presented in the last case reported in this paper. There may be three methods of eye involvement: direct infection with the virus, a local toxic effect in the eye as a result of the genital lesion, or an allergic manifestation. Lymphogranuloma venereum is not an uncommon disease, but ocular lesions associated with it have been reported comparatively rarely. It would appear that such a distinctive picture as that described in the paper would have been recognized if it were common. The eyes of patients in whom a diagnosis of lymphogranuloma venereum had been made at the Vanderbilt Clinic in New York were examined over an interval of several months. The anterior segments of the eyes were studied with the corneal microscope. In none of these patients was any evidence of preexisting or active corneal inflammation identified. The characteristic corneal involvement described in this paper seems to be an uncommon complication of lymphogranuloma venereum, and I wonder whether the authors have reached any conclusion as to its incidence. The authors of this paper are to be complimented for calling attention to a definite picture which appears to be pathognomonic of a disease which certainly, among ophthalmologists, has received little attention.

Dr. Garrett L. Sullivan, Boston: Any discussion of lymphogranuloma venereum would be incomplete without pointing up the confusion in terminology. To mention only some, we have such terms as lymphogranuloma inguinale, climatic bubo, Frei's disease, lymphogranuloma venereum and pudendal ulcer, and recently the term lymphopathia venereum has been proposed. In Europe, especially in France, it has been known as Nicholas Favre's disease. The first important step toward a more complete knowledge of this disease was achieved with the introduction of the Frei test in 1925. Rake, McKee and Shaeffer in 1940 obtained antigen of greatly increased concentration by culture of the virus in developing chick embryo. This is the most commonly used antigen in the Frei test at the present time. Since its introduction, this test has been widely used as an aid in diagnosis and it has been reported to elicit a positive reaction in a large percentage of patients with the disease. It should be emphasized that it is only significant of infection at some time with the virus. Recently the complement fixation test has been receiving the attention of researchers. There appears to be little doubt that Dr. Scheie's patients had had lymphogranuloma venereum at some time at least. However, the Frei reaction has been found positive in a large percentage of the Negro race. This, plus the fact that only 1 similar case has been reported in the literature, might cause one to question whether the keratitis which has been described can justifiably be termed "probably pathognomonic" of the disease. Attempts were made by Dr. Scheie in case 4 to obtain positive cultures with his biopsy material. The virus is notoriously labile and many investigators have found the optimum temperature for preservation to be —60 to —70 C. Therefore, it is suggested that the virus may have become inactivated in handling of the tissue or in preservation at a temperature possibly other than the ideal. Dr. Scheie found 6 cases reported in the literature in which Parinaud's syndrome proved to be caused by the virus of lymphogranuloma venereum. Checking the report by Levaditi and his co-workers and the report by Bollack, Basch and Desvignes gives a strong suspicion that both reports refer to the same patient. This suggests that the correct number is 5 rather than 6. If, indeed, the keratitis described by Dr. Scheie be caused by lymphogranuloma venereum, one is faced with the problem of explaining these different manifestations. Possibly the Parinaud syndrome is due to primary invasion of the eye through the conjunctiva while the keratitis might be explained on the basis of blood-borne virus.

Dr. Harold G. Scheie, Philadelphia: The incidence of keratitis due to lymphogranuloma venereum is uncertain. Lymphogranuloma venereum, as is true of other venereal diseases, has a high incidence in the tropics. Three hundred patients were admitted to the 20th General Hospital because of acute lymphogranuloma venereum. Having observed 5 patients with associated keratitis, an incidence of 1 per cent might be estimated. Actually the incidence of keratitis is probably much less than this figure because it occurs during both the acute and the latent periods of the disease. The evidence in favor of attributing the cause of this apparently distinctive type of keratitis to lymphogranuloma venereum is only presumptive because of failure to recover the virus. We do, however, believe that attention should be directed toward this condition.

Great Humanists.—An attitude is gaining ground among the profession as well as with the laity that if a man has no demonstrable defect and still persists in being ill, he should consult a psychiatrist. Or since psychiatrists are rare and such patients seem to be innumerable, he should perhaps try to find someone who for want of a better term has been called a specialist in psychosomatic medicine, and who has become especially interested in the relationships and interplay of organic and emotional disease. Such an attitude may have some justification in expediency to meet existing conditions but can do little toward the final solution of the problem. Psychosomatic medicine is medicine itself. The role of humanist cannot be assigned to any one group, whether its members be called psychiatrists, psychosomaticists or priests. The study of man and his values is at least as much a part of internal medicine as physiology, chemistry or anatomy. Fundamental concepts which involve or modify our understanding of all disease can never be regarded as clinical specialties. . . . By no means are all internists involved in these defects. Osler, Francis Peabody and many other of our predecessors were great humanists who in being so never lost their respect for science.—Barr, David P.: The Responsibilities of the Internist, *Annals of Internal Medicine,* August 1947.

A SELF-REGULATING FEEDING PROGRAM FOR INFANTS

C. ANDERSON ALDRICH, M.D.
and
EDITH S. HEWITT, M.D.
Rochester, Minn.

Considerable interest has recently been shown in the value of what has been termed the self-demand method of feeding infants. However, this term brings to mind a sort of autocratic, unlawful behavior whereas, according to our ideas, what we choose to call the self-regulating method is consonant with the democratic society of which the children are a part and with basic physiologic laws.

The data reported here have to do with the intervals of feeding chosen throughout the first year and with the appetites and attained heights and weights at 1 year of age. Information such as that concerning the formation of other habits and unapproved behavior will be reported later.

THE GROUP STUDIED

In this paper we report our experience in feeding 668 infants up to their first birthday by the self-regulating method. These comprise all the Rochester babies born in 1944 and 1945 for whom one year summaries were completed in the well-child clinics of the Rochester Child Health Project. They come from all economic strata of the city. A group of 100 infants, part of them derived from the group of 668 just mentioned, was studied more intensively to ascertain the feeding interval preferred.

INSTRUCTION OF THE MOTHERS AND DEVELOPMENT OF BABIES' HABITS

Of all babies born in Rochester, 96 per cent are delivered in St. Marys Hospital by physicians of the Mayo Clinic and immediately thereafter are placed under the care of members of the section on pediatrics of the clinic. At the same time they are registered for well-baby care under the Rochester Child Health Project. Instruction of the mothers in feeding their babies begins on the day of delivery if possible.

During the neonatal period these babies are cared for in a typical hospital nursery and are fed on a four hour schedule, except for the few babies who show outstanding need for a regimen of more frequent feedings. An earnest attempt is made to institute breast feeding, but when this is inadequate or impossible complemental and supplemental feedings are given to the babies in their mothers' arms. Feedings made up according to ordinary milk dilution formulas are given, and all the babies are allowed to take as much or as little as they desire. What has just been said does not apply, of course, to weak or premature infants.

Daily rounds are made by the staff, and all mothers are visited. Before dismissal to her home each mother is instructed in a personal interview by the fellow of the Mayo Foundation who is on service. She is told that feeding her baby will be infinitely easier at home than in the hospital, because she may feed him all he wants whenever he seems hungry. It will no longer be necessary to awaken her peacefully sleeping baby for feedings or to allow him to cry unsatisfied if he awakens before feeding time. She is told that if given a chance he will develop his own personal regularity within a few days or weeks and that her problem is to supply food and discover his innate rhythm of eating. She is invited to consult the physician by telephone when she is in doubt and to return with the baby for monthly conferences, beginning when the baby is 4 to 5 weeks of age. Four clinics are conducted weekly on a fee basis and five on a free basis. The day after the mother returns to her home a public health nurse visits her to iron out her difficulties and to give the baby a demonstration bath.

In addition to this service the mothers are given leaflets of instruction while in the hospital. These leaflets tell them what to expect of their babies at various ages up to 1 month and are designed to fill the gaps which might exist in the information given by physician and nurse. At monthly well-child conferences this technic of instruction by physician and nurse, plus printed leaflet, is continued. All records are compiled at these conferences, and observed data are supplemented with information given by the mothers.

A small group of babies included in this study were born at home or of parents who moved to this city in the course of the early months of life of the babies. They were cared for in the clinics in the same way as those who were born at St. Marys Hospital.

While at no time are mothers instructed to feed their babies according to a definite, prearranged schedule or to give prescribed amounts of food, except in an attempt to adjust to the expressed needs of the babies, mothers definitely are told what kind of foods to offer. This is necessary because the great variety of foods now available in the sophisticated menus employed in the United States is too complicated for the infant, with his primitive selectivity. A definite attempt also is made to indicate changes in the types of food and methods of feeding offered whenever the infants show themselves physiologically mature enough to accept such changes. Semisolids are offered when the babies demonstrate their ability to use the appropriate muscles for carrying food back from the mouth into the oropharynx and esophagus. Solids are given when chewing movements begin, and the cup and spoon are offered when hands begin to reach for them. Mothers are advised to continue bottle feeding until other methods are well established or until the babies begin to reject the bottle; this rejection often is delayed until well into the second year of life.

The infants are allowed considerable freedom in their selection of foods which have similar nutritional value, such as the different vegetables and fruits, and appropriate seasoning with salt is advised. Mothers are told to give, at most of the feedings, types of food which the babies prefer rather than to try to broaden the menu despite the resistance of the babies.

Furthermore, in evaluating the results shown in this paper, it should be borne in mind that we have no way of knowing exactly to what extent the mothers followed instructions. All we can say is that when mothers were so taught this is what happened. On the other hand, it is true that most of the women expressed great relief that the restraints were removed so that they could act in a more motherly way toward their babies.

No great difficulty was experienced by the physicians in the clinics in teaching the mothers how to learn the feeding rhythms of their babies. In the majority of instances mothers were surprised when they were asked if they had trouble in knowing when

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From the Section on Pediatrics, Mayo Clinic, and Director, Rochester Child Health Project (Dr. Aldrich) and from the Rochester Child Health Project (Dr. Hewitt).

their babies were hungry. The group of babies most difficult to manage were those who suffered from "three months colic." In this difficulty we share in the perplexity experienced by all pediatricians.

While the children were under the overall supervision of experienced practitioners, much of the actual day by day instruction was given by fellows of the Mayo Foundation who were in training. The fellows are all graduates who have finished internships or residencies. Nevertheless, the setup is more nearly comparable to that found in dispensary clinics in many of our hospitals than to that found in pediatric office practice.

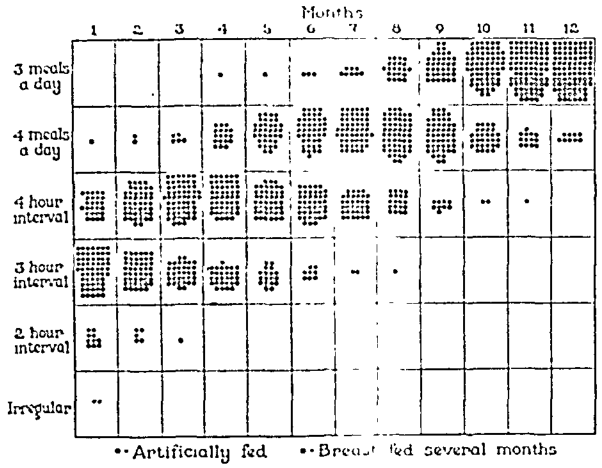

Fig. 1.—Self-regulating schedule showing trend toward the adoption of longer intervals between feedings, by more and more of the 100 infants, as their ages increased.

THE FEEDING INTERVALS CHOSEN

The group of 100 infants was studied to ascertain the intervals of feeding during each month of the first year. Forty of them were breast fed for several months, and sixty were artificially fed. Records of all were taken consecutively from our files, and the feeding intervals were charted as reported at each monthly conference (figs. 1 and 2). The intervals noted were: too irregular to state, two hours, three hours, four hours, four meals daily and three meals daily. Whenever the statement read "two to three hours" or "three to four hours" the shorter interval was tabulated. For this reason the trend from short to longer intervals is somewhat retarded in our figures over what actually happened, and the incidence of intervals of two and three hours is somewhat exaggerated.

The illustrations show that the feeding intervals of only 2 of the infants were too irregular to be graded and that these unpredictable babies put themselves on a regular schedule soon after they were 1 month of age. At 1 month of age 10 of the babies chose a two hour interval of feeding. This short interval was not used beyond the age of 3 months. Sixty-one of the infants were on a three hour schedule at the age of 1 month, while only 26 chose the more approved four hour regimen at this age. However, at 2 months of age the number of babies on the three hour regimen decreased and the number of those on the four hour schedule increased, so that the numbers in the two groups were approximately equal at that age. The number of babies on a three hour regimen continued to fall, while the number on a four hour schedule continued to increase to a peak at 3 months. The number of infants on the four hour schedule then began to decline and gave way to adoption of a schedule of four meals a day by an increasing number of infants. Change from the four hour schedule to the four meal schedule was effected by elimination of the late evening feeding. The number of babies who adopted the schedule of four meals a day reached a high plateau at the age of 7 to 9 months. This number in turn declined, to give way to adoption of the schedule of three meals a day by an augmented number of babies. The schedule of three meals a day was adopted as early as the age of 4 months by some babies, and their number continued steadily to rise until, at the age of 12 months, 91 of the infants had selected this adult feeding plan.

The trends shown in the illustrations demonstrate a definite, orderly progression from a short interval to a longer interval between feedings. In the main it appears that the usually prescribed schedules do not deviate to a great extent from the average intervals chosen by the babies.

Two points are noteworthy in this regard: first, in the early weeks of life a large majority of the babies chose an interval of less than four hours and second, it is obvious from a glance at the figures that, whereas a rigidly prescribed routine of feeding intervals could meet the requirements of the average baby it could not possibly fit the needs of those whose natural rhythms deviated greatly from such averages. Both the precocious babies, who tended to lengthen their intervals early in life, and the slower-to-change babies would be out of step. Since these deviations represent a large proportion of the total number of infants, the prescription of set schedules without regard to rhythms of individual infants must necessarily give rise to conflicts in matters of feeding.

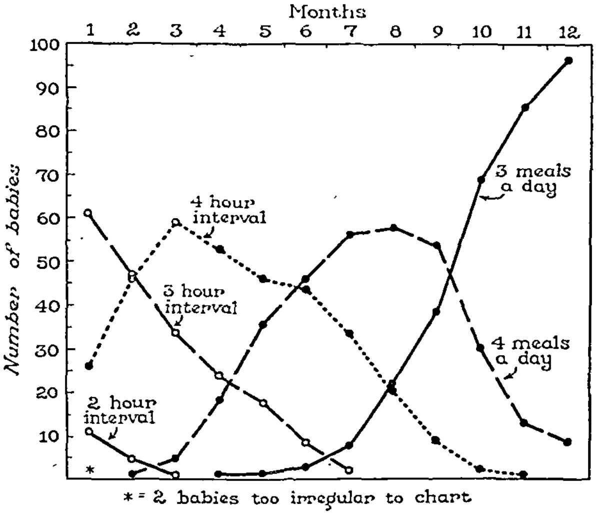

Fig. 2.—Self-regulating schedule, showing the increase or decrease, as age advanced, in the number of infants who adopted each feeding interval; the same 100 infants are represented both here and in figure 1.

THE APPETITES AT ONE YEAR OF AGE

By the method of handling feeding routines that has been described, it was hoped that we could reduce anorexia to a minimum. Accordingly, in addition to self regulation in the timing of meals the program of allowing the babies to eat as much or as little as they desired was undertaken. At the monthly conferences, mothers were instructed to feed no more of any food than the babies would take eagerly.

We are reporting a summary of the results in terms of appetite. Each mother at the one year conference was asked whether her child: (1) refused prescribed food and occasionally vomited; (2) was resistant to feeding or needed to be coaxed to eat; (3) never refused food, or (4) had a voracious appetite. Table 1 shows the result of this survey as applied to 664 of the 668 infants.

It will be observed that less than 1 per cent of the infants at 1 year of age presented frank problems as far as appetites were concerned. Approximately 7 per cent more could be placed in a borderline category, while more than 92 per cent of the babies ate extremely well.

Since we know of no accurate statistics as to the incidence of anorexia at 1 year of age, we cannot compare these figures with those of other clinics and must be satisfied to record this material without comparisons. However, we might conclude that under this sort of management an extremely large percentage of infants ate extremely well at one year of age; so that any increase in difficulty in the second year would be due to factors arising after the first birthday.

TABLE 1.—*Appetite at the End of One Year*

	Number	Per Cent
Refuses prescribed food; occasional vomiting......	6	0.9
Resistant; needs coaxing...........................	46	6.9
Never refuses food.................................	573	86.2
Voracious appetite	39	5.9
Total...	664	99.9

ATTAINED HEIGHTS AND WEIGHTS

Tables 2 and 3 show the height and weight attained at approximately 1 year of age. As it was impossible to get all the babies to the clinic on their exact birthdays, the one year summaries were computed at the visit nearest to this time. In order to be sure that this inaccuracy did not influence our average figures, we compared the average weights and heights of all those whose dates of yearly summary examination deviated greatly from the exact birthdays with the average weights and heights of those who appeared at approximately the exact anniversaries of their births. We found no significant differences.

The wide range in heights and weights is probably due to the fact that all of our premature babies were included. We consider that an average height of 29.4 inches (74.67 cm.) and an average weight of 21.8 pounds (9.9 Kg.) compare favorably with generally accepted figures. We consider it justifiable to conclude that the stature at 1 year of age was not impaired by the self-regulating technic of feeding.

SUMMARY

The care of 668 babies was supervised in well-baby clinics from the time of their dismissal from the hospital to go to their homes until their first birthdays. All these infants were put on a self-regulating regimen designed to allow the babies free choice as to intervals of feeding and amounts of food, although the kinds of foods included in the menu were prescribed. The records of these babies were studied with respect to the feeding intervals chosen by the babies throughout the first year and as to their appetite and attained stature at 1 year of age. The word stature is employed in this paper in its meaning of development or growth, which embraces both height and weight.

TABLE 2.—*Height at Approximately One Year of Age*

Height		Babies	
Inches	Cm.	Number	Per Cent
25	63.50	2	0.3
26	66.04	4	0.6
27	68.58	33	4.9
28	71.12	108	16.2
29	73.66	214	32.0
30	76.20	191	28.7
31	78.74	89	13.3
32	81.28	16	2.4
33	83.82	3	0.4
Not recorded	.....	8	1.2
Total................................		668	100.0

Maximal height, 33.0 in. (83.82 cm.)
Minimal height, 25.0 in. (63.50 cm.)
Average height, 29.4 in. (74.67 cm.)

The feeding intervals during the first month of life were classed as irregular, two hour, three hour, four hour, four meals daily and three meals daily.

The babies chose to lengthen their feeding intervals gradually, so that the average at various months agreed fairly closely with the intervals usually prescribed by physicians. However, a large majority of babies desired an interval of less than four hours in the first two months of life. Our figures show that a rigid routine, even if regulated to fit the average baby at each age, will leave a large group of infants poorly adjusted as far as timing is concerned.

At 1 year of age, 91 per cent of the babies had automatically placed themselves on a regimen of three meals a day.

TABLE 3.—*Weight at Approximately One Year of Age*

Weight		Babies	
Pounds	Kg.	Number	Per Cent
14	6.4	1	0.1
15	6.8	1	0.1
16	7.3	3	0.4
17	7.7	26	4.0
18	8.2	45	6.7
19	8.6	50	7.5
20	9.1	85	12.7
21	9.5	110	16.5
22	10.0	105	15.7
23	10.4	75	11.4
24	10.9	64	9.6
25	11.3	38	5.7
26	11.8	26	4.0
27	12.2	15	2.2
28	12.7	9	1.3
29	13.2	3	0.4
30	13.6	5	0.7
31	14.1	1	0.1
Not recorded	....	6	0.9
Total................................		668	100.0

Maximal weight, 31.0 lb. (14.1 Kg.)
Minimal weight, 14.0 lb. (6.4 Kg.)
Average weight, 21.8 lb. (9.9 Kg.)

At 1 year of age, the appetites of 92 per cent of the babies were excellent, those of 7 per cent of the babies were of borderline character and those of less than 1 per cent of the babies were poor.

The attained heights and weights of the babies at 1 year of age compared favorably with the generally accepted standards, 29.4 inches (74.67 cm.) and 21.8 pounds (9.9 Kg.).

Special Article

PLANNING FOR THE CHRONICALLY ILL

Joint Statement of Recommendations by the

AMERICAN HOSPITAL ASSOCIATION
AMERICAN PUBLIC WELFARE ASSOCIATION
AMERICAN PUBLIC HEALTH ASSOCIATION
AMERICAN MEDICAL ASSOCIATION *

The conquest of many of the acute communicable diseases has focused increasing attention on chronic diseases[1] as the major causes of death and disability. Numerous communities are now awakening to their responsibilities for the chronically ill. In eight states and at least four cities, action to meet the problem of chronic illness has already been taken or is in the planning stage.[2]

There is a great need for comprehensive planning to insure that the widespread interest in chronic disease is channeled into sound and effective activity. Such planning requires the mutual cooperation of the agencies and professions most vitally concerned with the problem. For this reason, representatives of the American Hospital Association, the American Medical Association, the American Public Health Association and the American Public Welfare Association have considered the experience already accumulated and have prepared this statement as a guide in the development of community programs. Although planning to meet the economic needs of the chronically ill is of vital importance, primary consideration is given here to the health and medical aspects of the total problem, including prevention, research, treatment and rehabilitation.

It is hoped that the general public, as well as legislators and members of the health and welfare professions, will find this statement a useful guide and stimulus to planning for the chronically ill.

EXTENT OF CHRONIC ILLNESS

Chronic illness affects nearly every family. It has been conservatively estimated that about 25 million persons, more than a sixth of the population, have a chronic disease.[3] Some 7 million of these have appreciable disability from their illness,[4] while 1½ million are invalids.[5] The most important of the chronic diseases are heart disease, arteriosclerosis, high blood pressure, nervous and mental disease, arthritis, kidney disease, tuberculosis, cancer, diabetes and asthma.[6] Because special provisions have been made for patients with tuberculosis and mental disease, they are not included in the scope of this statement.

Each year chronic diseases cause nearly a million deaths and are responsible for the loss of almost a billion days from productive activity.[3] Appropriate action can prevent much of this staggering loss to our economy.

Although the prevalence of chronic diseases increases with age, and the progressive aging of our population is one of the factors responsible for the growing importance of the problem, it must be borne in mind that chronic illness occurs at all ages. Fully one half of the chronically ill are below the age of 45, and 16 per cent of them are under 25. More than three fourths are persons in the productive years from 15 to 64.[3]

Chronic illnesses in childhood and adolescence are particularly important because they influence the period of growth as well as the entire period of adult life. They may have serious effects on the emotional development and social adjustment as well as on the education of their young victims.

PREVENTION

The basic approach to chronic disease must be preventive. Otherwise the problems created by chronic diseases will grow larger with time, and the hope of any substantial decline in their incidence and severity will be postponed for many years.

There is a need to intensify health department programs to control chronic communicable diseases such as tuberculosis, syphilis, hookworm and malaria. Accident prevention programs —in industry, on the farm and in the home—should be greatly expanded to reduce the incidence of physical handicaps.

The promotion of optimal health throughout life is an important factor in the prevention of chronic illness. Child and school health programs need to be strengthened. Wide expansion of nutrition, mental health and housing programs can have important effects in decreasing the incidence of chronic illness.

The success of programs to conserve the health of infants and children suggests the possibility of achieving effective health programs directed to adolescents as well as adults. The health programs of our high schools and colleges, including medical examinations and correction of defects, physical fitness and recreational programs and health education require intensive development.

The periodic medical examination of apparently well persons needs to be explored on a new basis, including selective laboratory and clinical examinations chosen for particular age, sex, geographic and occupational groups. These include the serum reaction, chest x-ray, urinalysis, electrocardiography and ophthalmoscopic and other examinations.[7]

Industry and labor can play an important constructive role in this connection by encouraging health examinations of employees, including laboratory procedures, on a much larger scale than at present.

The recent development of special phases of the health examination, particularly in the fields of tuberculosis control and cancer detection, is especially noteworthy. The great interest shown by the medical profession and the public in chest x-ray surveys and in the establishment of diagnostic centers to examine apparently well persons for early signs of cancer represents a distinct advance in preventive medicine. It may well initiate a basic shift in emphasis in the medical care of adults comparable to that which has occurred in obstetrics and pediatrics, in which preventive supervision and examination of presumably well persons is a major requirement of good medical practice. There is a need to explore the practical possibilities of preventive examinations to discover all possible disease, making full use of the diagnostic aids developed by modern medical technology.

RESEARCH

Further advances in the prevention as well as the treatment of many chronic diseases are dependent on research. Although a good deal of research is now being carried on in chronic disease, only a fraction of the total need is being met.

War experience in medical research has made it clear that we must broaden our vision and think in terms of research planned and organized on a much larger scale than any now contemplated. This requires the training and support of a much larger corps of medical scientists and the development of teams of research workers to carry forward coordinated programs. The greatest emphasis must be placed on those

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* See Report of Reference Committee on Miscellaneous Business of the House of Delegates in The Journal, July 5, 1947, p. 883.

1. The term "chronic disease" is susceptible of various definitions. This has been suggested as an administrative definition of chronic disease: "A disease that may be expected to require an extended period of medical supervision and/or hospital, institutional, nursing or supervisory care" (Rogers, E. S.: Chronic Disease: A Problem That Must Be Faced, Am. J. Pub. Health **36:** 345 [April] 1946). In the National Health Survey, chronic disease was defined for statistical purposes as " a disabling or nondisabling chronic pathologic condition known to the informant, the symptoms of which had been recognized for at least three months" (Perrott, G. St. J.: The Problem of Chronic Disease, Psychosom. Med. **7:** 22 [Jan.] 1945). Another definition is that used for survey purposes by the Public Welfare Council of Connecticut: "a disease or condition of the body or personality which has been present at least six months or which may be expected to continue at least six months and which interferes with one's occupation and normal physical and social life" (Need for a State Infirmary for the Care and Treatment of Aged, Infirm and Chronically Ill Persons, Public Welfare Council, Hartford, 1944, p. 4).

2. The states referred to are California, Connecticut, Illinois, Indiana, Maryland, Massachusetts, New Jersey and New York. The cities are Chicago, Cleveland, Milwaukee and New York.

3. Perrott.[1] The estimates given are admittedly low because of the survey technic used.

4. National Health Survey, Some General Findings as to Disease, Accidents and Impairments in Urban Areas, Pub. Health Rep. Reprint No. 2143, p. 2 ff. The frequency of chronic illnesses causing disability of at least seven consecutive days in a twelve month period was found to be 48 per thousand persons, or approximately 7 million for the total population.

5. The Magnitude of the Chronic Disease Problem in the United States, National Health Survey, Sickness and Medical Care Series, Bulletin 6, p. 6.

6. Importance was determined by the combined indexes of prevalence, mortality, disability and invalidism. See reference 5, p. 7.

7. Roemer, M. I.: A Program of Preventive Medicine for the Individual, Milbank Quart. **23:** 209 (July) 1945

diseases which are the most important causes of death and disability, such as heart disease, high blood pressure, arteriosclerosis, arthritis, kidney disease, cancer, diabetes and asthma.

Research institutes in chronic disease, associated with clinical facilities, may well become the basic units of such a program. In New York City the research services of the Goldwater Memorial Hospital have carried on important research in kidney disease, arteriosclerosis, malaria and cirrhosis of the liver.[8] In Illinois the State Commission on the Care of Chronically Ill Persons is considering the advisability of developing a state supported university research institute for the study of chronic illness which would, in addition to suitable research facilities, provide beds for 200 patients and an outpatient service for 15,000 patients a year.[9] The National Institute of Health is formulating plans for intensive laboratory and clinical research in heart disease, geriatrics, cancer and mental disease.

There is a great need for administrative research, for more precise information on methods of providing the necessary services for the chronically ill. Basic research on some of the administrative problems is already being undertaken,[10] but the field is a relatively new one and requires intensive study and development.

Research is necessary also in the social and psychologic aspects of chronic illness. The influence of these factors in the development of specific chronic diseases needs to be more fully determined, while the effect of chronic illness on the individual's social relationships needs further study.

MEDICAL CARE

In the past, the approach to chronic illness has been primarily concerned with institutional care for advanced stages of disease. There is need for a new orientation which places major emphasis on the early stages of chronic illness with a view to preventing or at least delaying the progress of the disease process.

Diagnosis and treatment of illness at its inception is essential to the control of chronic disease. Competent medical supervision, if brought into play early enough, can have an important preventive effect. The most dramatic expression of this fact found in cancer control, where diagnosis of early symptoms prompt treatment may be a life saving measure. Early [illegible]osis and proper management of diabetes prevents the serious complications of infection, gangrene and coma. Similarly, early diagnosis and treatment may prevent complications or prolong the lives of persons with heart disease, hypertension, rheumatic fever, peptic ulcer and other chronic diseases.

The barriers to early competent diagnosis and treatment must be removed. This requires the construction of hospital and laboratory facilities to cover all our communities, with coordination of facilities to insure a maximum of diagnostic and therapeutic effectiveness for the individual patient. Health and medical agencies need to plan to fill the great needs for personnel as rapidly as possible. Means must be found to remove the basic economic barriers to early diagnosis and therapy.

Health departments, which have carried on excellent educational activities in communicable disease, should turn in increasing numbers to the larger field of chronic illness and teach the public the facts about heart disease, cancer, diabetes and other chronic diseases, with special emphasis on early signs and symptoms and the importance of early and continued medical supervision.

The concept of medical care must be broadened to include the social factors which play a vital role in the progress of chronic illness. Physicians have learned, for example, that it is not enough to cure a patient with minimal tuberculosis and send him back into the community. On the contrary, he must be observed carefully over a long period for signs of reactivation of the disease process. Even more important, the physician must draw on community resources in order to change the patient's environment to prevent breakdown. If the patient's previous occupation called for strenuous physical exertion, he should be retrained for office work or some other light occupation so that he can live with his tuberculosis or other chronic disease. Occupational retraining and job placement are essential therapeutic and preventive measures.

Several general considerations should be borne in mind in planning to provide adequate medical care for the chronically ill:

First, the care of the chronically ill is inseparable from general medical care. While it presents certain special aspects it cannot be medically isolated without running serious dangers of deterioration of quality of care and medical stagnation.

Second, major emphasis must be given to coordination and integration of services. The person who is chronically ill will receive the type of care which he specifically needs only if provision has been made for the highest possible degree of coordination. Since the medical condition of the chronically ill person is not static but changes with time, it is essential to develop smoothly operating mechanisms for referral from one type of care to another.

Third, facilities for the care of the chronically ill should be planned for the community as a whole and not for the indigent alone. Chronic disease strikes all sections of the population, and the lack of facilities is as great for those who are able to pay as for those who cannot. The facilities for chronic disease should be community institutions serving all sections of the population. They will in this way achieve a greater degree of financial stability because of the additional income from those able to pay, and will be able to furnish a higher quality of care.

Fourth, the services and facilities necessary for the medical care of the chronically ill require considerable and continuing financial expenditures in order to maintain the quantity and quality of care offered. Good medical care for chronic illness cannot be purchased on an "economy" basis.

Fifth, and most important, the goal of medical care is to maintain and restore the chronically ill as independent and self-supporting members of the community. Major emphasis should be placed on home and office care, with hospital care, convalescent care and rehabilitation serving where possible to return the chronically ill to productive community life, and with nursing home facilities providing for those whose medical condition is such that they cannot remain in their home environment.

HOME CARE

The majority of persons who are chronically ill can best be cared for in home, office and clinic.

It is unwise as well as unpractical to consider a separate home, office or clinic service for the chronically ill; their needs are best met by inclusion in the general community medical care program.

Ready access to diagnostic and specialist service is essential to adequate care for chronic diseases, since many of them are difficult to diagnose and treat.

One of the most pressing needs is for an expansion of public health nursing service to provide bedside and other nursing services for the chronically ill. Most rural communities and small cities do not have sufficient public health nurses to provide adequate bedside nursing care. Some of the larger cities have well organized bedside nursing programs, but even here the number of nurses is generally below the estimated minimum of 1 nurse to 2,000 persons to carry out all public health nursing activities, including bedside care.[11] In addition to increasing the number of public health nurses, there is need to train them to provide valuable assistance to physicians in the time consuming task of educating the individual patient in the proper understanding and management of his chronic illness.

Much wider use should be made of practical nurses and nurses' aides, working under the supervision of the public health nurse, for duties which do not require the training and experience of a graduate nurse.

Housekeeper service should be widely encouraged; there has already accumulated ample experience to show the value of the visiting housekeeper in the home care of chronic illness.[12] Housekeeper service performs the important social function of enabling the chronically ill patient to remain at home and has an economic value in helping to reduce the need for expensive institutional facilities.

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[8] Research, An Experiment in Municipal Organization, Department of Hospitals, New York City, 1945, p. 48 ff.

[9] Communication from R. M. Hilliard, public aid director, state of Illinois.

[10] The Central Service for the Chronically Ill in Chicago is making a detailed study of the needs and costs of care *of different categories of* nursing home patients.

[11] Resolution of the National Organization for Public Health Nursing, June 1944, Public Health Nursing **37**, No. 3, January *1945*.

Other measures which enable chronically ill persons to be cared for at home include improved housing, supervised boarding homes, medical social service, recreational and occupational therapy, and vocational rehabilitation. Social security measures to maintain income such as disability insurance, old age insurance and public assistance are likewise of vital importance.

HOSPITAL CARE

The large number of chronically ill persons in general hospitals who require long-term care represents a serious problem to hospital administrators.[13] The general hospital as at present constituted is often unsuited to the care of long term patients, since it is geared primarily to the therapeutic and general requirements of the acutely ill. It may lack adequate departments for physical therapy, occupational therapy and rehabilitation, as well as sun porches, recreational facilities, educational facilities for children and an understanding of the social and psychologic needs of the chronically ill.

The average long term patient requires less costly care than that provided in the acute general hospital.[14] To continue to care for the long term patient in the acute general hospital is wasteful; it provides care which is more expensive than he actually needs and which is often unsuited to his requirements.

The construction of hospital facilities for the chronically ill has been encouraged by the passage of the Hospital Survey and Construction Act, which provides federal aid for such facilities up to a maximum of two beds per thousand of population.[15]

There is already evident a tendency in some localities to build chronic disease hospitals in areas remote from the medical center and the general hospital and with no relation to them. This trend unfortunately follows the pattern already laid down in the construction of our tuberculosis and mental hospitals, a pattern which has resulted in many instances in the medical isolation and stagnation of these special institutions.

Hospital facilities for long term illness should be build in the very closest relation to teaching centers and general hospitals.

The specialized chronic disease hospital is suitable in large cities, where it can be located on the grounds of or very closely related to a medical school or teaching general hospital. Special consideration should be given to planning the facilities for children who are chronically ill. While an official or voluntary organization may be responsible for the construction and maintenance costs, the medical school should provide the attending and resident staff and utilize the facilities for research and medical education in chronic disease.

It is important that the specialized chronic disease hospital serve as the consultation center for chronic disease in its medical service region.[16] It should maintain formal professional affiliation with general hospitals in the region that care for chronic patients in order to provide consultation and teaching visits from the center to the general hospitals as well as the referral of patients to the center for special study.

Most patients with chronic illness that require hospitalization are best cared for in a unit of the general hospital especially designed to meet their needs. This arrangement encourages patients to seek and use care, since it is near their homes, families and friends, makes available to them the existing facilities of general hospitals, provides opportunity to interns, nurses and staff for experience and teaching in chronic disease, avoids expensive duplication of existing general hospital facilities and affords the most ready means of transfer to and from the acute and chronic disease sections of the hospital when needed. Further, it allows for greater flexibility in hospital planning by making it possible for future, unforeseen shifts in the relative proportions of patients with acute and chronic diseases to be met by changing the designated use of either chronic or acute beds in the same hospitals.

Many advantages of this plan would be lost if the chronically ill were simply intermingled with all other patients in general hospitals. The provision of a special wing or floor devoted to long term patients insures that the special needs and problems of chronic disease are not lost sight of in competition with the more urgent and dramatic needs of the acutely ill. It makes possible the planning of the special unit in conformity with its special purpose, both as to architecture and as to staff. It makes it easier to provide occupational and recreational therapy, special physical therapy, rehabilitation and other services essential to the care of long-term patients. It facilitates a more economical use of nursing personnel, the utilization of a larger proportion of attendants and less intensive medical staff attendance than is needed in the section of the hospital devoted to patients with acute illnesses.

Under no circumstances should chronic disease hospitals or units be limited to the indigent. The lack of facilities is felt by all sections of the population. High standards will be maintained most effectively if the facilities are geared to meet the requirements of the entire community. Also the admission of patients who are able to pay will reduce the need for tax funds. It must be recognized, however, that prolonged illness exhausts the financial resources of many patients, necessitating payment of tax funds for their care.

CARE IN NURSING HOMES

Chronically ill persons who need active and continuous medical care should be treated in a hospital. On the other hand, there are many chronically ill persons who are more or less disabled by their illness, whose requirements for care can be met by practical nurses and attendants with medical and nursing supervision and who cannot or should not remain at home. Care for such persons should be provided in nursing homes.

The following example may make the difference clear: A person who has suffered a cerebral hemorrhage with paralysis of one side of his body requires hospital care. This care will extend over a period of weeks and months, during which time he will receive intensive physical therapy to restore the maximum possible use of his muscular system. When no further improvement can be obtained by medical treatment and he is left with a good deal of disability which makes it impossible for him to be cared for at home, he is eligible for care in a nursing home.

Nursing homes, both private and public, should be brought under state licensure laws in which provision is made for minimum standards and regular inspection. The minimum standards should require continuing medical supervision, including complete medical examinations of patients prior to admission to the nursing home and follow-up examinations at definite intervals, as well as physician visits on a regular basis and on call. The standards should call for a sufficient number of practical nurses and attendants to meet the full needs of the patients. They should provide for at least one full time graduate nurse in charge of nursing care.[17] The standards should require facilities for recreation and occupational therapy, for a maximum of privacy and individual attention, and for cheerful and homelike surroundings. Construction should meet adequate standards of safety and sanitation.[18]

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[12] Jarrett, M. C.: Housekeeping Service for Home Care of Chronic Patients, Welfare Council of New York City, Dec. 31, 1938.

[13] The percentage ranges from 7 to 20, depending on the area surveyed. In New York City in 1928 a fifth of the ward beds in both private and municipal general hospitals were occupied by chronic patients (Jarrett, M. C.: Chronic Illness in New York City, Columbia University Press, 1933, vol. 1, p. 119). In New Jersey in 1940 thirty-eight general hospitals reported that 7 per cent of the total number of patients were chronically ill (Frankel, Emil: New Jersey Studies Problems of Care for the Chronically Ill, Hospital Management **50:** 19 [Aug.] 1940). The findings to date in the Illinois State Health Department's survey of hospital facilities indicate that about 15 per cent of the beds in the general hospitals of the state are occupied by chronically ill patients (unpublished data).

[14] The cost at Montefiore Hospital, a high standard voluntary chronic disease hospital in New York City, is more than two-thirds the cost in acute general hospitals (communication from Dr. E. M. Bluestone, director). In 1945 the cost at Goldwater Memorial Hospital, a municipal chronic disease hospital in New York City, was one-half the average cost in the acute general municipal hospitals (communication from Dr. E. M. Bernecker, commissioner of hospitals of New York City).

[15] Public Law 725, 79th Congress, sec. 622 (b).

[16] Planning for the Care of the Chronically Ill in New York State—Regional Aspects, New York State Health Preparedness Commission, Albany, 1946. Health Service Areas, Public Health Bulletin 292, U. S. P. H. S., Washington, 1945.

[17] The present shortage of nursing personnel makes it impossible in many instances to meet this requirement. The New Jersey State Department of Institutions and Agencies has met the situation by helping nursing home operators to make arrangements for a daily supervisory visit from the local visiting nurse association. The plan seems to be working very well.

Private Nursing Homes

Experience has demonstrated that improvement in the quality of private nursing homes cannot be obtained merely by passage of a licensure law. The power to inspect and license nursing homes carries with it the responsibility for carrying on an intensive educational campaign, working with the individual nursing homes to improve the care given. The device of placing each new nursing home on a six month probationary period, during which time there is a great deal of educational assistance from the licensing agency, has been demonstrated to be an effective method of raising standards.[19]

It is suggested that, wherever possible, the quality of medical and nursing supervision can be greatly improved through arrangement with the medical board of a nearby hospital to provide the necessary medical services.

One of the most serious drawbacks to adequate care by private nursing homes is the low payments made by welfare agencies for clients requiring nursing home care. A sharp upward revision of payments by welfare agencies, to bring them up to the actual cost of care, is an indispensable prerequisite to raising standards. At the federal and state levels, liberalization or elimination of the ceiling on payments for public assistance clients is indicated.

Public Nursing Homes

The realization that a large proportion of the population of county homes or almshouses consists of chronically ill adults has led to a widespread movement to convert them into public nursing homes.

It is clear that such conversion does not make the almshouse a chronic disease hospital but rather a nursing home for the chronically ill.

County homes should be converted into public nursing homes only if their physical facilities are adequate, if they are within reasonable distance of general hospitals with which close medical relationships are maintained, and if the responsible authorities are prepared to meet the minimum standards described previously: namely, adequate medical and graduate nursing supervision; sufficient personnel to meet the full needs of the patients, including medical social service if possible; provision for privacy, a cheerful and homelike atmosphere and recreational and occupational therapy and construction which meets safety and sanitation requirements. Many county homes cannot meet these conditions and should therefore not be considered for conversion.

It is suggested that conversion be planned on a statewide basis, with the most careful evaluation of the suitability of individual almshouses for conversion. Financial and technical assistance by the state to localities planning conversion will make it possible to achieve higher standards of care. Public nursing homes should be included in the provisions of nursing home licensure laws.

A factor which will help obtain increased community interest, better administration and higher quality care in public nursing homes is the admission of patients able to pay part or all of the cost of care. There is a considerable demand for public nursing home care on the part of patients able to pay. By opening its facilities to such patients the public nursing home will not only improve its financial position but perhaps begin to free itself from the almshouse tradition and serve as a public facility for the entire community.

The Social Security Act should be amended to allow federal matching to states for assistance to patients who wish to enter public medical institutions, including nursing homes, that meet adequate standards. Payment for nursing care in public as well as private homes should be commensurate with the actual cost.

New Institutions

The shortage of institutions for nursing home care of the chronically ill cannot be met by present facilities or by the conversion of county homes. There is a definite need for new construction.

It is recommended that voluntary and governmental general hospitals which have chronic disease pavilions give serious consideration to establishing nursing home facilities for the chronically ill. These facilities should be built on the grounds of the general hospital or within a reasonable distance. There should be close administrative, medical and nursing relationships between the hospital and the nursing home.

The specialized chronic disease hospitals located in teaching centers should likewise maintain nursing homes which can be utilized for research and training and will set standards of quality of nursing home care.

The construction of new institutions should be closely integrated with state plans for reconversion of public homes and utilization of private nursing homes in order to prevent an overabundance of facilities in some areas and lack of facilities in others.

CONVALESCENCE AND REHABILITATION

Undoubtedly the most neglected aspect of chronic illness is that of convalescence and rehabilitation.

Only recently has there been recognition of the fact that convalescent care is an important feature of the care of the chronically ill. Chronic diseases often run a course of many years, with periods of relative well-being alternating with periods of illness. Following a flare-up of illness, adequate convalescent care may lead to complete or partial rehabilitation and may help delay the progress of the underlying chronic disease. Such convalescent care undoubtedly conserves hospital beds and performs important therapeutic and preventive functions. Examples of chronically ill persons requiring convalescent care would include those recovering from a period of heart failure, an attack of acute rheumatic fever or a flare-up of arthritis. Then there are persons who have a chronic illness such as diabetes or heart disease and develop pneumonia or some other acute illness and need convalescent care after recovery from the acute illness.[20]

There has been a large growth of convalescent homes for children with rheumatic heart disease and other crippling conditions. It is essential that such convalescent homes be located near enough to general hospitals to permit close professional relationships and adequate medical supervision.

Convalescent homes for adults have never been developed to any appreciable extent in the United States. Most convalescent care for adults is now provided in nursing homes which also care for nonconvalescent patients. On the whole, there has been insufficent appreciation of the value of convalescent care and rehabilitation in the care of the chronically ill.

Recent experience with planned convalescence and rehabilitation in the armed forces has demonstrated their great potential usefulness. By providing physical reconditioning, educational training, recreational activities and vocational guidance it was found possble to shorten the period of hospitalization, reduce the incidence of recurrences and return a larger proportion of men to active duty.[21]

Planned convalescence and rehabilitation are particularly important in chronic disease. The chronically ill have to be made conscious of their limitations early in the course of the disease, and many of them must be retrained for new occupations so that they may stay within the limits of activity prescribed by their illness and yet maintain their economic independence.

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[18] A detailed description of minimum standards of nursing home care is given in Institutional Care of the Chronically Ill, a report issued by a joint committee of the American Hospital Association and American Public Welfare Association in January 1940.

[19] Potter, E. C., and others: Inspection and the Power of License as Tools in the Care of Chronically Ill, Public Welfare **2:** 100 (April) 1944.

[20] Boas, E. P.: Convalescence and Chronic Illness, from Proceedings of Conference on Convalescent Care, New York Academy of Medicine, Nov. 9, 1939, p. 38.

[21] Rusk, H. A.: Planned Convalescence, Bull. New York Acad. Med. **22:** 465 ff (Sept.) 1946.

Probably the first steps along these lines will be taken by university hospitals, some of which have already made plans for rehabilitation centers as an integral part of their medical program.

In 1943 Congress broadened the scope of the national rehabilitation program. As a result, state rehabilitation agencies were able to rehabilitate successfully nearly 42,000 persons in 1945. These were generally persons with long standing chronic impairments and illnesses—orthopedic disabilities, speech, hearing and sight defects, poliomyelitis, tuberculosis, mental disease, heart disease, asthma, hernia and other conditions.[22] That the need is still far from being met is indicated by the fact that the estimated backlog of persons in need of and entitled to such service is between 1½ and 2 million.[22]

Of the 42,000 disabled persons who were successfully rehabilitated in 1945, nearly 79 per cent were unemployed at the time of applying for rehabilitation service and 18 per cent had never been employed. The average yearly income before rehabilitation, including those who received assistance from public or private sources, was $288. The average annual wage after rehabilitation was $1,764. The total income of the group was increased by rehabilitation from 12 million dollars a year to 74 million, a sixfold increase.

In the past, many of the disabled have had to be supported by public or private assistance at a cost up to $500 a person each year. Vocational rehabilitation costs an average of only $300 a person, and this cost is not repeated.[23] On the contrary, rehabilitation changes the individual into a self-sustaining productive member of the community. It is clear that rehabilitation is economically and socially sound.

The results achieved with long standing chronic impairments and diseases point up the great potentialities of rehabilitation instituted early in the course of chronic illness.

COORDINATION OF SERVICES

The problem of chronic disease presents many aspects—prevention, research, medical care in home, hospital and nursing home, and convalescence and rehabilitation.

Undue emphasis on any one aspect would be unwise, uneconomical and ineffectual. For example, to concentrate on the provision of medical care without paying serious attention to prevention and research would postpone for many years any basic attack on the problem. On the other hand, it is impossible to focus sole attention on research because of the very urgent need for medical care. Likewise, to provide hospital beds for chronic disease without making nursing home facilities available would result in many beds being occupied by patients who do not need hospital care. Too great an emphasis on nursing homes would deprive many patients of the specialized hospital care which is necessary for their improvement. Failure to plan adequately for home care or for convalescent care and rehabilitation would defeat the purpose of the program—to maintain and restore the individual as a self-supporting productive member of his community.

There is a great need for cooperation and coordination of the numerous agencies concerned with chronic disease: health, welfare and education departments, hospitals, medical societies, medical schools, social agencies, rehabilitation services, nursing homes. In some communities this coordination has been achieved through the establishment of central planning and coordinating bodies which study the various aspects of the problem, make the facts known to authorities and the public, stimulate needed services, assist in securing necessary facilities and act as information centers for patients, physicians, and health and social agencies.[24]

The total problem of chronic disease is not a series of separate problems which can be solved one by one but rather a complex of interrelated problems which require simultaneous solution. It is recommended, therefore, that coordinated and comprehensive planning be undertaken at all levels in order to achieve effective action to meet the challenge of chronic illness.

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22. Annual Report of the Federal Security Agency, Office of Vocational Rehabilitation, 1945, p. 15 ff.
23. Rusk, H. A.: New York Times Magazine, May 12, 1946.
24. The Institute of Medicine of Chicago—The Central Service for the Chronically Ill, Health Division, Council of Social Agencies, Chicago, February 1946. Jarrett, M. C.: Care of the Chronically Ill of Cleveland and Cuyahoga County, Benjamin Rose Institute, Cleveland, 1944, p. 36.

Clinical Notes, Suggestions and New Instruments

GUMMA OF THE VAGINA

WALTER J. REICH, M.D.
and
MITCHELL J. NECHTOW, M.D.
Chicago

This report concerns a case of gumma of the vagina. Syphilis of the vagina is not common, especially the gummatous lesion. The history of syphilis probably begins with Ambroïse Paré (1510-1590) who, according to Pusey, employed a vaginal speculum to study the vaginal and uterine lesions of venereal disease. The resistance of the squamous epithelium of the vagina to syphilitic infection and the coincident biologic reasons have been the subject of considerable comment from numerous syphilologists.

According to Gellhorn and Ehrenfest,[1] the literature of Lancereaux (1868) does not contain any positive records of tertiary manifestations of syphilis of the vagina, which must be rarer than the exceptional primary and secondary lesions.

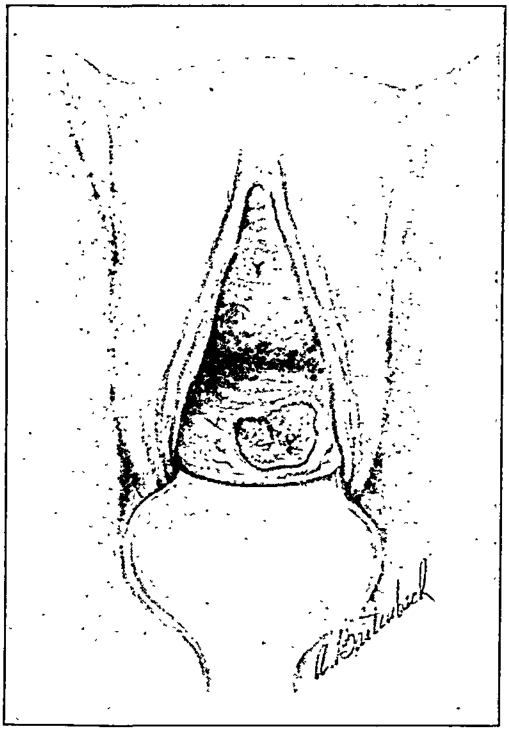

Fig. 1.—Drawing showing the gumma on the posterior vaginal wall.

In 1877 Birch-Hirschfeld described a case of diffuse gummatous perivaginitis. Neumann up to 1896 had seen only 3 cases of vaginal gummas. Oppenheim[2] in 1908 described a syphilitic tertiary ulcer of the vagina. The most recent record of a tertiary ulcer of the vagina is that of Ballog[1] in 1914.

Tertiary syphilitic manifestations originate extremely infrequently in the vagina. The isolated submucous gumma breaks down early and appears in the form of a characteristic ulcer.

Pusey has stated that tertiary lesions occur only in tissue in which foci of infections have been planted during the secondary period. Gummas of the cervix have been reported in fairly large number.

From the service of E. W. Fischmann.

From the Gynecological Division of the Cook County Hospital, the Cook County Graduate School of Medicine and the Hektoen Institute for Medical Research.

1. Gellhorn, G., and Ehrenfest, H.: Syphilis of the Internal Genital Organs in the Female, Am. J. Obst. & Gynec. 73: 864, 1916.
2. Oppenheim, M.: Atlas der venerischen Affektionen der Portio vaginalis uteri und der Vagina, Leipzig, F. Deuticke, 1908.

According to Becker and Obermayer[3] tertiary lesions are rare, and they do not discuss them at any length. Up to 1916 Gellhorn and Ehrenfest recorded only 50 authentic cases of primary lesions in the vagina in their survey of world medical literature. Stookey[4] reported only 2 cases of primary lesions of the vagina and none of the tertiary lesions.

REPORT OF CASE

History.—M. W., a Negro woman aged 60, was admitted Dec. 12, 1945 and discharged Jan. 25, 1946. On admission the tentative diagnosis was carcinoma of the vagina. The patient complained of pain in the lower part of the abdomen and of an odorous vaginal discharge for the past four weeks. She stated that she was well until these symptoms became apparent. The discharge became more pronounced when she was up and about; weakness accompanied the leukorrhea and pain.

Past History.—The menopause occurred when the patient was 47 years of age. She had had nine pregnancies with six living children. She had had no serious ailments, and the balance of the history was noncontributory.

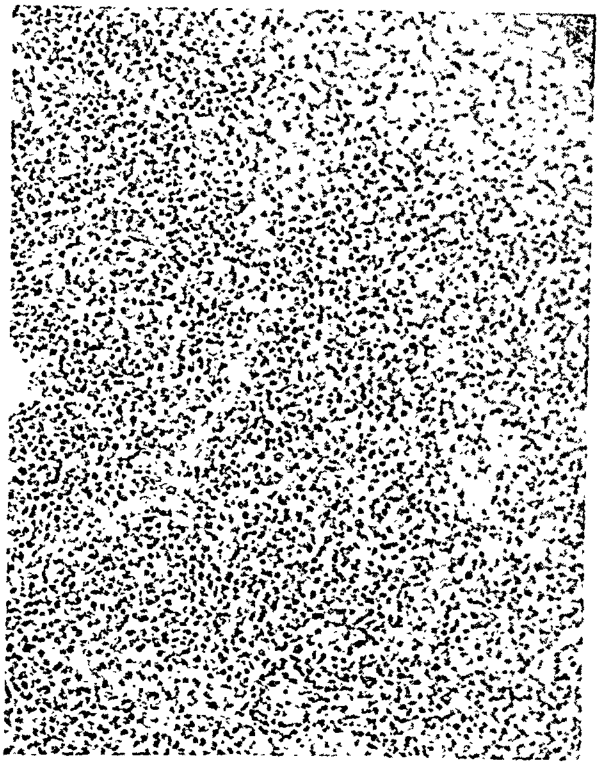

Fig. 2.—Photomicrograph showing the histopathologic structure of the gummatous lesion (magnified × 180).

Physical Examination.—Physical examination revealed a Negro woman who appeared asthenic but not acutely ill. The blood pressure was 130 systolic and 90 diastolic, the temperature 98 F. and the pulse rate 88. The pupils were unequal; the right was larger than the left and did not react to light and accommodation. Multiple bony exostoses of the forehead were present.

Pelvic Examination.—Pelvic examination revealed a multiparous vaginal introitus. The external genitalia did not manifest any gross pathologic conditions. Bartholin's gland, Skene's ducts and the urethra were essentially normal. The posterior portion of the vaginal vault revealed on palpation an irregular, crater-like lesion, measuring 3 to 4 cm. in diameter, with firm margin and edges, the center of which felt soft; it was tender on palpation (fig. 1). Examination with the speculum exposed the lesion distinctly: it exuded a mucopurulent foul-smelling discharge. The remainder of the vaginal mucosa did not appear to be affected. This lesion did not stain with strong solution of iodine. Rectal examination failed to disclose any connection between this lesion and the rectum. The remainder of the examination of the pelvis did not disclose any gross pathologic conditions.

The impression was that of a primary carcinoma of the vagina.

Biopsy.—A biopsy specimen was taken from several areas, and the report submitted from the surgical pathology laboratory revealed the following: The tissue showed vascular granulation infiltrated by lymphocytes, many mononuclear cells, a few eosinophils and plasma cells (fig. 2). The endothelium of blood capillaries was swollen. This was a syphilitic gummatous lesion.

Laboratory Data.—The Wassermann and Kahn serologic tests were positive. Urinalysis was negative for sugar and albumin. The hemoglobin level was 60 per cent. The red blood cell count was 3.9 millions.

Treatment and Course.—This patient was referred to the venereal disease clinic. She was treated with antisyphilitic agents, and the lesion disappeared.

SUMMARY AND CONCLUSION

1. A case of a gumma of the vagina is reported.
2. The world literature is sparse in authentic reports of such cases.
3. Probably because of both the biologic reasons and the resistance of the epithelial lining of the vagina few cases of syphilitic lesions are observed.
4. The gross appearance of this lesion simulated that of a primary carcinoma of the vagina.

55 East Washington Street—58 East Washington Street.

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[3] Becker, S. W., and Obermayer, M. E.: Modern Dermatology and Syphilology, Philadelphia, J. B. Lippincott Company, 1940.

[4] Stookey, P. F.: Primary Manifestations of Syphilis in Women, Am. J. Syph. **11**: 68-72, 1927.

SENSITIZATION TO THE PRESSOR ACTION OF EPINEPHRINE ("ADRENALIN")

A Warning Concerning the Use of Epinephrine as an Antidote After the Administration of Tetraethyl Ammonium Chloride

IRVINE H. PAGE, M.D.
and
R. D. TAYLOR, M.D.
Cleveland

The recent widespread interest in the action of tetraethyl ammonium ion as the result of the work of Acheson with Moe[1] and Pereira[2] in demonstrating its selective blocking of transmission of impulses across sympathetic ganglions has led to its clinical trial in a wide variety of vascular disease. We,[3] as well as Lyons and associates,[4] have been particularly interested in its action in hypertensive patients, and it is with these that this communication is concerned. Epinephrine ("adrenalin" N. N. R.) has been recommended as the antidote of choice after excessive doses of tetraethyl ammonium chloride. Acheson and Moe[1] have shown that in cats with spinal block induced by this drug the response to epinephrine was at least unaffected.

During the course of experiments to determine the effect of tetraethyl ammonium chloride on the blood pressure of hypertensive dogs, there was occasion repeatedly to test the response to epinephrine before and after administration of the former drug.

From the Research Division of the Cleveland Clinic Foundation, Cleveland.

[1] Acheson, G. H., and Moe, G. K.: The Action of Tetraethylammonium Ion on the Mammalian Circulation, J. Pharmacol. & Exper. Therap. **87**: 220, 1946.

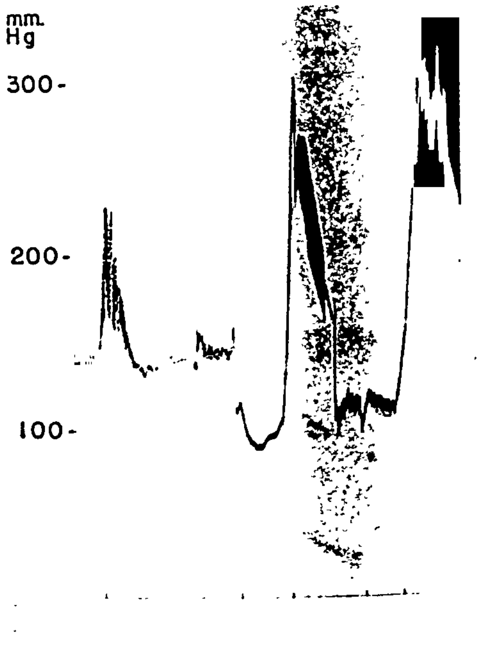
[2] Acheson, G. H., and Pereira, S. A.: The Blocking Effect of Tetraethylammonium Ion on the Superior Cervical Ganglion of the Cat, ibid. **87**: 273, 1946.

[3] Birchall, R.; Taylor, R. D.; Lowenstein, B. E., and Page, I. H.: Clinical Studies of the Pharmacological Effects of Tetraethyl Ammonium Chloride in Hypertensive Persons Made in an Attempt to Select Patients Suitable for Lumbodorsal Sympathectomy and Ganglionectomy, Am. J. M. Sc., to be published.

[4] Lyons, R. H.; Moe, G. K.; Neligh, R. B.; Hoobler, S. W.; Campbell, K. N.; Berry, R. L., and Rennick, B. R.: The Effects in Man of Blockade of the Autonomic Ganglia by Tetraethyl Ammonium Bromide, J. Clin. Investigation **25**: 914, 1946.

Dogs were anesthetized with pentobarbital sodium, arterial pressure recorded from the femoral artery and injections made into the femoral vein. Test doses of epinephrine hydrochloride (0.2 cc. of 1:20,000 solution) were followed by a single dose of 100 mg. of tetraethyl ammonium chloride. When the blood pressure had begun to rise after its maximal fall, the same dosage of epinephrine was repeated. Instead of producing the usual rise in blood pressure, varying from 30 to 50 mm. of mercury, the drug augmented it several fold. Rises of 100 to 150 mm. of mercury or more were not unusual (see the accompanying illustration). This dramatic sensitization to epinephrine seems to occur regularly. A test dose of nicotine after the administration of tetraethyl ammonium chloride resulted in little or no response. It is of physiologic interest that hepatectomy not only reduces the response to epinephrine hydrochloride but blocks the augmenting action of tetraethylammonium chloride (unpublished observation with Dr. J. J. Reinhard).

Since the dose of tetraethyl ammonium chloride (100 mg. in dogs weighing from 9 to 12 Kg.) is well within the range used in human beings, it has seemed desirable to warn of the possibility that a safe antidotal dose of epinephrine may be much less than usual after tetraethyl ammonium has been administered. Sensitization to epinephrine is much more prominent in dogs anesthetized with pentobarbital sodium than in unanesthetized animals.



Sensitization to epinephrine and renin in a dog under anesthesia with pentobarbital sodium. First injection, epinephrine 0.2 cc. in 1:20,000 dilution; second, tetraethyl ammonium chloride 100 mg.; third, same dose of epinephrine; fourth, nicotine 0.15 cc. in 1:1,000 dilution; fifth, renin. The control injection of renin is not shown; the rise in arterial pressure was 46 mm. of mercury.

It is easily conceivable that patients with cardiovascular disease, especially those with coronary or cerebral lesions, might be seriously injured from a sudden and severe rise in arterial pressure with vasoconstriction of the degree possible after sensitization due to the administration of tetraethyl ammonium.

The mechanism of the sensitization is uncertain. It might be suggested that it is an explosive manifestation of sensitization of denervation demonstrated by Elliott[5] in animals and by Freeman, Smithwick and White[6] in man. In animals, however, this phenomenon is said to appear between one and two weeks after denervation, while in man six to eight days are required: tetraethyl ammonium sensitization is immediate. It is also possible that amine oxidases are in some way blocked by tetraethyl ammonium ion, since the response not only to epinephrine but to renin and angiotonin is also greatly augmented.[7]

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[5] Elliott, T. R.: The Action of Adrenalin, J. Physiol. **32:** 401, 1905.

[6] Freeman, N. E.; Smithwick, R. H., and White, J. C.: Adrenal Secretion in Man: The Reactions of the Blood Vessels of the Human Extremity Sensitized by Sympathectomy, to Adrenalin and to Adrenal Secretion Resulting from Insulin Hypoglycemia, Am. J. Physiol. **107:** 629, 1934.

[7] Page, I. H., and Taylor, R. D.: Mechanism of Renin Tachyphylaxis—Restoration of Responsiveness by Tetraethyl Ammonium Ion, Science **105:** 622, 1947.

Council on Physical Medicine

The Council on Physical Medicine has authorized publication of the following article. HOWARD A. CARTER, *Secretary.*

THE USE OF X-RAYS FOR THE TREATMENT OF HYPERTRICHOSIS IS DANGEROUS

ANTHONY C. CIPOLLARO, M.D.
New York
and
MARCUS B. EINHORN, M.D.
Albany, N. Y.

Dermatologists, radiologists, physicists and others administering roentgen therapy for any purpose are well aware of the immediate dangers to the skin and the long range sequelae of this type of treatment. Soon after the discovery of x-rays by Roentgen in 1895 their application to the treatment of diseases of the skin was carefully studied and their effects noted. The x-rays were found to benefit many dermatoses and by 1897, their epilating effect having become known, they were used for the treatment of superfluous hair. Many investigators were studying the beneficial effects of roentgen rays on diseased tissue, while other research workers were studying their harmful effects on normal tissue. They soon learned that single large doses or repeated small doses over a long period of time were dangerous. They discovered that the effects of repeated small doses were cumulative and produced destruction of tissue many years after their administration. Sequelae were known to appear in the form of pigmentation, depigmentation, telangiectasia, wrinkling, atrophy, keratoses, ulceration and finally carcinoma. These facts were constantly stressed and reported in the literature by the pioneers working with roentgen rays and radium.

Matas[1] reported x-ray sequelae which appeared years after treatment, emphasizing the delayed appearance of x-ray burns after long periods of latency. Porter[2] in 1909 reported 47 cases of skin injuries due to roentgen rays with 41 of these resulting in cancer. In 1922 he again wrote a paper on roentgen ray sequelae, reporting 107 cases, in which he described harmful lesions occurring as the result of a single massive dose or repeated small doses of roentgen rays.

Wolbach[3] stressed the fact that malignant changes are not sudden but take place after a period of years.

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[1] Matas, R.: Remarks on the Delayed or Remote Appearance of X-Ray Burns After Long Periods of Latency, Am. J. Roentgenol. **13:** 37 (Jan.) 1925.

[2] Porter, C. A.: The Surgical Treatment of Roentgen Ray Lesions, Am. J. Roentgenol. **13:** 31 (Jan.) 1925.

[3] Wolbach, S. B.: A Summary of the Effects of Repeated Roentgen Ray Exposures on the Human Skin Antecedent to the Formation of Carcinoma, Am. J. Roentgenol. **13:** 139 (Feb.) 1925.

MacKee and Cipollaro,[4] Stout,[5] Pfahler[6] and many other investigators confirmed these findings. MacKee and Cipollaro[7] reported that malignant disease developed in an estimated 25 per cent of patients with radiodermatitis, especially in those in whom there had been such sequelae as keratoses, sclerosis and ulcerations. These cancers were usually of the squamous cell type, although sarcomas, basal cell epitheliomas and bowenoid lesions have also been reported.

The fact that roentgen rays could produce permanent alopecia was well known then as it is today. It was found that the large dose necessary to produce epilation could also cause the destruction of all cellular structures about the hair follicles, could burn the skin and bring about atrophy, wrinkling, telangiectasia, keratoses and sooner or later could cause cancer or other malignant diseases, which in some instances caused death. Then, as now, experience showed that roentgen rays and all other ionizing radiations are so insidious that cancer of the metastasizing type might occur months or years after their application. These undesirable late effects occurred after a single treatment or after multiple treatments administered during several days or weeks. Dermatologists and radiologists have been aware for years of the dangers of treating hypertrichosis with x-rays, dangers unnecessary because this condition is only a cosmetic defect and is amenable to safe methods of treatment.

But while the members of the medical profession, on the one hand, frowned on the treatment of hypertrichosis with radiation therapy, lay groups on the other hand were springing up to treat unwanted hair by roentgen ray methods for profit. Because it was found to be a lucrative business, catering especially to in women who wanted hair removed permanently d painlessly from the face, legs, thighs, breasts and ven from the pubic and perianal areas, quacks and charlatans, individually or in unscrupulous institutes, groups, organizations and systems, began operating throughout the country. Some of these quacks were aware of the dangers of x-rays but were unconcerned about the long range results of their use. The names of the treatments were the "Tricho System," "Short Wave Treatment," "Epilax Ray," "Light Treatment" and other terms which did not disclose the nature of the treatment.

Perhaps the most widely publicized and largest organizations engaged in the business of treating hypertrichosis with x-rays was the "Tricho Institute." It is believed that Albert C. Geyser, M.D., a New York physician, was the founder of this institute in the early 1920's. He claimed to have perfected the x-ray treatment so that he had a harmless method of removing superfluous hair. In order not to mention x-rays, he called his method the "Tricho System." He leased machines for the production of roentgen rays to beauty parlors and, in addition, gave a two week course to the beautician who was to operate the machine. After this short period of instruction in theory and clinical practice, the graduate was, according to Geyser standards, qualified to operate according to the Tricho System.

The average dose was approximately one-half skin unit.[8] The treatments were given every two weeks and the hair was shed by the sixth treatment. After the loss of hair, more treatments were administered so that the alopecia would be permanent. Dr. Geyser claimed that this procedure caused functional interference with and gradual atrophy of the hair papillae.

It was evident that Dr. Geyser[9] knew what might happen if these x-ray machines were allowed to fall into the hands of inexperienced operators. In 1925 he delivered an address at the Chicago meeting of the American Association for Medico-Physical Research on the "Truth and Fallacy Concerning the Roentgen Ray in Hypertrichosis." In this address he spoke plainly of the dangers of roentgen ray doses sufficient to produce permanent epilation but protected himself by stating that his method was quite safe because he used homeopathic doses with filtration administered over a long period of time. Dr. Geyser later claimed to have seen over 25,000 areas cleared of superfluous hair in a period of ten years. His system flourished, with branches in many cities over the entire United States and in Canada.

As the years passed, cases of radiodermatitis, horrible burns, painful ulcerations and cancer resulting from the Tricho System of treatment were observed by dermatologists and other physicians in all sections of the country. The dangers and sequelae that were stressed by the pioneers were now made manifest years after the treatment had been ended. The so-called harmless rays, administered by inexperienced operators for large financial returns, had left their imprints. These ranged through pigmentation, depigmentation, telangiectasia, atrophy, wrinkling, keratoses, ulceration, cancer and death. Even sarcoma can be the result of the Tricho treatment. Kaplan[10] reported a case of sarcoma developing in an area of radiodermatitis following the removal of superfluous hair by the Tricho Institute. Judging from conversations with dermatologists in different sections of the country and judging from the many cases of radiodermatitis seen in practice and in clinics, the number of cases of x-ray burns, cancer and death resulting from treatments administered by the Tricho Institute must have run into the thousands. It is impossible to obtain or estimate the actual number because the cases were not reportable and therefore were not recorded.

In 1929, at the eightieth annual session of the American Medical Association, a resolution was passed that all roentgen ray burns due to the treatment of hypertrichosis by the Tricho System and allied systems be reported to the Bureau of Investigation[11] and that these methods of treatment be condemned as highly dangerous to the patient. Many dermatologists and other physicians cooperated in this investigation. These case reports were published in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION[12] Jan. 19, 1929 in abstract form. The A. M. A. Bureau of Investigation had reprints made of the article, with additions. So vital is this subject at the present time that this reprint is given in full:

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[4] MacKee, G. M., and Cipollaro, A. C.: X-Rays and Radium in the Treatment of Diseases of the Skin, ed. 4, Philadelphia, Lea & Febiger, 1946, pp. 239, 452.

[5] Stout, A. P.: Human Cancer, Philadelphia, Lea & Febiger, 1932, p. 17.

[6] Pfahler, G. E.: Electrocoagulation or Desiccation in the Treatment of Keratoses and Malignant Degeneration Which Follow Radiodermatitis, Am. J. Roentgenol. **13**:41 (Jan.) 1925.

[7] MacKee, G. M., and Cipollaro, A. C.: Cutaneous Cancer and Precancer, New York, the American Journal of Cancer, 1937, pp. 69, 71 (fig. 4), and Paul S. Hoeber, New York.

[8] Roentgen ray dosage in the early twenties was mostly empirical; there were no accurate physical methods of measuring a dose of roentgen rays such as there are today.

[9] Geyser, A. C.: Truth and Fallacy Concerning the Roentgen Ray in Hypertrichosis, Scient. Therap. & Pract. Research **3**:118, 1925-1926; Hypertrichosis and the *Tricho* System of Treatment, ibid. **4**:49, 62, 1926-1927.

[10] Kaplan, I. I.: Radiation Therapy, New York, Oxford University Press, 1937, pp. 107, 513 (fig. 196).

[11] Resolution that All Cases of X-Ray Burns of the Skin Resulting from Treatment by the Tricho System and Allied Systems Employing Radiation Be Reported to the Bureau of Investigation, J. A. M. A. **93**: 293 (July 27) 1929.

[12] The Tricho System, J. A. M. A. **92**:252 (Jan. 19) 1929.

Prepared and Issued by the Bureau of Investigation of the American Medical Association in October 1930.—

THE TRICHO SYSTEM

The Albert C. Geyser X-Ray Method of Depilation

Quoting from the opening paragraph of the advertising booklets distributed by "beauty parlors" that use the method: "Tricho System is the invention of Albert C. Geyser, M.D., a New York physician internationally famous as a specialist on Electro-Therapy."

Dr. Geyser claimed to have so modied the x-rays that with his apparatus it was possible to produce permanent baldness in hairy areas without any possibility of doing any damage to the skin. He called his device not an x-ray machine but a "Tricho System." In New York City, where the law requires that x-ray operators must be licensed and shall operate only under a permit, Dr. Geyser made application for a permit, which was issued, as Dr. Geyser is a legally licensed practitioner of medicine. This fact was taken advantage of in the advertising material of the Tricho concern, where this statement appeared:

> "The machine also has been examined for the Division of Institutional Inspection of the Board of Health of the city of New York and pronounced—SAFE."

While this statement was technically true, it was grossly misleading to the public, for the public might naturally assume that the word "safe" refers to the therapeutic effects rather than the mere physical equipment.

The Tricho Sales Corporation leased the Geyser machines to "beauty parlors" and the machines are scattered across the country from the Atlantic to the Pacific, the northern boundary to the Gulf.

It is not necessary to tell physicians—at least, those with any extensive dermatologic experience—how serious a menace is the use of the x-rays in the removal of superfluous hair. The tragedy in the case arises from the fact that the precancerous keratoses and other untoward effects are usually not evident for months after the "treatment" has been given. There is the further unfortunate factor in the problem that the victims—nearly always women—frequently refuse to prosecute, because of the inevitable publicity. A few dermatologists have, however, reported cases to The Journal of the disfiguring and dangerous sequelae that have followed the use of the Tricho System.

A brief abstract of the histories of some of the cases that have been reported to The Journal follows:

Miss E. W. (aged 31), Boston.—Tricho treatments from 1924 to the spring of 1927. Beginning telangiectasia on each side of the face and chin, with subcutaneous redness and dry skin. (Reported by Dr. Arthur M. Greenwood.)

Mrs. C. F. B. (aged 42), Boston.—Numerous Tricho treatments, last one July 1927. Lip and chin dry and wrinkled, with area of whitish atrophy and blotches of redness; nodule on right side with sluggish, necrotic center. (Reported by Dr. Arthur M. Greenwood.)

Mrs. R. H. M. (aged 53), Boston.—Twenty-six Tricho treatments, commencing June 1925. Skin of cheeks red, slightly thickened, with scaly patches, considerable itching, skin dry and two crusted pigmented lesions on neck, with scattered telangiectases. (Reported by Dr. C. Guy Lane.)

Mrs. C. J. E., Boston.—Twenty-five Tricho treatments, commencing in 1925. Skin of cheek dry, thick, pigmented, with a few scattered telangiectases. Two areas of chronic radiodermatitis on each side of the neck, with increased pigmentation, atrophy and telangiectases. (Reported by Dr. C. Guy Lane.)

Mr. I. L. (aged 35), Boston.—Fifteen Tricho treatments, last one in February 1926, for excessive hairiness of the neck. Extensive areas of telangiectasia, with atrophy, extending over neck and on to cheeks. (Reported by Dr. C. Guy Lane.)

Miss A. M. (aged 35), Boston.—Fourteen Tricho treatments of hands in 1926. In 1928 small red spots over backs of both hands and fingers, marked telangiectases and slight thinning. (Reported by Dr. C. Guy Lane.)

Miss B. F.—Twenty-five Tricho treatments on face and forearms four years previously. Atrophy and telangiectasis on both face and forearms. (Reported by Dr. J. H. Swartz.)

Miss B.—Tricho treatments to face. Atrophy, telangiectasis and ulceration. (Reported by Dr. J. H. Swartz.)

Mrs. A. E. C. (aged 32), Boston.—Fifteen Tricho treatments five years previously. Red blotches, with areas of telangiectasis and atrophy on chin. (Reported by Dr. C. Guy Lane.)

Mrs. R. C. (aged 50), Boston.—From thirty to forty Tricho treatments, the last one two years previously. Red spots on left side of chin, with stinging sensation, telangiectasia and atrophy. (Reported by Dr. C. Guy Lane.)

Mrs. H. S. (aged 36), Boston.—Tricho treatments five years previously. Red blotches on cheeks and under chin, with marked atrophy and extensive telangiectasia. (Reported by Dr. C. Guy Lane.)

Miss M. H. (aged 23), New York.—Tricho treatments four years previously for hairiness of cheeks and chin. Moderately severe telangiectasia of both cheeks and chin. (Reported by Dr. Howard Fox.)

Miss M. S. (aged 25), New York.—Two years' Tricho treatments, about twenty-five in all. Telangiectases of both cheeks and beneath the jaw; some of the superfluous hair still remains. (Reported by Dr. Howard Fox.)

Mrs. L. (aged 38), New York.—Tricho treatments in 1924 for hairiness of the legs. Red burning areas developed, became crusted and then turned "dead white." Application of iodine to a mosquito bite in one of the white scars followed by persistent ulceration. (Reported by Dr. Howard Fox.)

Mrs. B. (aged 25), New York.—Tricho treatments for one year, ending August 1924, for hairiness of chin and neck. Telangiectasia appeared one year later, gradually increasing to involve lower jaw, chin and neck. (Reported by Dr. Howard Fox.)

Mr. H. E. (aged 31), New York.—Consulted Albert C. Geyser in spring of 1923 for hairiness of the trunk. Treated at that time and also a year later. X-ray burn, with telangiectasia, over entire chest, upper abdomen and back, with pigmentation, atrophic white spots and crusts. (Reported by Dr. Howard Fox.)

Miss E. E. (aged 32), New York.—Fifteen to eighteen Tricho treatments in 1926 and 1927. Telangiectasia of both forearms, with slight atrophy of the skin; much of the hair has returned. (Reported by Dr. Howard Fox.)

Mrs. I. K. (aged 37), New York.—Fifteen Tricho treatments for hairiness of face and arms in 1924. A year later, telangiectases appeared; now profuse on both arms and moderate amount on cheeks and chin. (Reported by Dr. Howard Fox.)

Mrs. A. C. P., Connecticut.—Twenty Tricho treatments. Red spots developed over treated areas, skin wrinkled, cheeks, neck and upper lip showed telangiectases, pigment destroyed and marked wrinkling, due to atrophy. (Reported by Dr. Joseph Gardner Hopkins.)

Miss R. H., New York City.—Eight months' Tricho treatment for hairiness of chin and forearms. Two years later, skin of chin wrinkled, white and covered with a fine down. Below chin two deep red, oval patches of telangiectases; tufts of dilated veins forming dark red points on forearms. (Reported by Dr. Joseph Gardner Hopkins.)

Miss B. G. (aged 24), Boston.—Two years after taking Tricho treatments for excessive hair on the chest, telangiectasia became evident, with atrophy. (Reported by Dr. Austin W. Cheever.)

Miss M. R. (aged 29), Brooklyn.—Tricho treatments for several months. Wrinkling of skin about chin and cheeks, with numerous patches of telangiectasia. (Reported by Dr. Joseph J. Eller.)

Miss R. V. (aged 22), Brooklyn.—Twenty treatments by Albert Geyser. X-ray burn of chin and neck region, with wrinkling and telangiectasia. (Reported by Dr. Joseph J. Eller.)

Miss S. T., St. Louis.—Twenty-three Tricho treatments of cheeks and neck. Dry dermatitis of the area, with wrinkling, atrophy and scattered telangiectasia. (Reported by Dr. G. V. Stryker.)

Miss S. T., New York.—Tricho treatments three years previously. Marked telangiectasia of the chin and neck, commencing two years after treatment and getting steadily worse; also some atrophy. Still considerable hair in the area involved. (Reported by Dr. George Miller MacKee.)

Miss S. R., New York.—Twenty Tricho treatments three years previously. Telangiectasia and atrophy both present and growing steadily worse. Painful ulcer as large as a silver dollar over left jaw. (Reported by Dr. George Miller MacKee.)

Miss E. T., New York.—Tricho treatments six years previously for hairiness of the face. Atrophy developed four years later. Patches of telangiectasia, pigmentation and depigmentation, with wrinkling; also a scleroderma with keratotic surface. Still considerable coarse dark hair over area treated. (Reported by Dr. George Miller MacKee.)

Mrs. E. F. (aged 30), Washington, D. C.—About thirty Tricho treatments for hairiness of legs in 1927. Extensive telangiectasia and beginning atrophy over entire outer surface of both legs from hips down. (Reported by Dr. F. J. Eichenlaub.)

Miss C. R. M. (aged 28), Washington, D. C.—Twenty-four Tricho treatments in 1926. Both cheeks and chin show marked atrophy, wrinkling of the skin, with telangiectasia; over angle of one jaw an ulcer, suspicious of beginning cancer. (Reported by Dr. F. J. Eichenlaub.)

Miss M. S. (aged 27), Washington, D. C.—Large number of Tricho treatments in 1924. Chin shows well-marked x-ray burns, with wrinkling, atrophy and telangiectasia. (Reported by Dr. F. J. Eichenlaub.)

Mrs. E. B. (aged 30), Washington, D. C.—Number of Tricho treatments in 1926. Cheeks and chin show marked wrinkling and some atrophy; still some hair present. So depressed about disfigurement that she attempted suicide. (Reported by Dr. F. J. Eichenlaub.)

Miss M. W. (aged 28), St. Louis.—Tricho treatments two years previously for hairiness of arms. Multiple marked telangiectases of both forearms and lower portion of arms; entire area mottled. (Reported by Dr. Erich Brockelmann.)

Mrs. W. S., Buffalo, N. Y.—Tricho treatments in 1927 and 1928 for hairiness of chin, neck and cheeks. Shows mild degree of atrophy and telangiectasia over area treated. (Reported by Dr. Earl D. Osborne.)

Miss H. B., Buffalo, N. Y.—Ten Tricho treatments for hairiness of neck, face, forehead and lip in 1927 and 1928. In May 1929, moderate degree of atrophy, telangiectasia and facial disfigurement. (Reported by Dr. Earl D. Osborne.)

Mrs. F. G., Buffalo, N. Y.—Tricho treatments in 1925, 1926 and 1927 for hairiness of cheeks and chin. In September 1928, moderate degree of atrophy, telangiectasia, mottled pigmentation and facial disfigurement. (Reported by Dr. Earl D. Osborne.)

Mrs. J. W. (aged 49), Detroit.—Tricho treatments in the summer of 1927. In spring of 1929, an ulcer over the angle of the right jaw, cheeks and neck, covered with telangiectases, keratoses and atrophy. Numerous long hairs in the atrophic skin. (Reported by Dr. Rollin H. Stevens.)

Mrs. A. W., Detroit.—Several Tricho treatments five years previously. Red and white spots on the skin of the face, with atrophy and telangiectases; several hairs still present. (Reported by Dr. Rollin H. Stevens.)

Mrs. H. J. P. (aged 29), Detroit.—Reported several Tricho treatments five years previously. Two or three years later patient noticed red marks and atrophic areas. This gradually spread, so that in May 1930 there was atrophy and telangiectases of the cheek, neck and chin. (Reported by Dr. Rollin H. Stevens.)

Miss D. M. (aged 26), Washington, D. C.—Took Tricho treatment for superfluous hair on hands, forearms, axilla, chin and outer portion of right lip. Developed numerous telangiectases of the hands and arms, atrophy and telangiectasis in both axillae, wrinkling of the skin of the chin, with atrophy and telangiectasis of the upper lip; also marked atrophy of the gum beneath the lower lip. (Reported by Dr. H. H. Hazen.)

Mrs. A (aged 38), Washington, D. C.—Developed marked wrinkling of cheeks and chin and numerous telangiectases over this area, following Tricho treatment. (Reported by Dr. H. H. Hazen.)

Miss H. (aged 28), Washington, D. C.—Developed wrinkling and large blotchy telangiectases beneath the chin, with considerable atrophy and retraction of gums of both upper and lower jaws, following the Tricho treatment. (Reported by Dr. H. H. Hazen.)

Mrs. P. (aged 32), Washington, D. C.—Eighteen months after Tricho treatment, developed numerous telangiectases of forearms and of legs from knee to ankle, with marked atrophy of the skin of both legs. (Reported by Dr. H. H. Hazen.)

Mrs. G. (aged 35), Washington, D. C.—Developed wrinkling of the eeks and chin and numerous blotchy, purplish telangiectases of the same ca, together with marked retraction of both upper and lower gums, ollowing the Tricho treatment. (Reported by Dr. H. H. Hazen.)

Mrs. Z. (aged 55), Washington, D. C.—Following Tricho treatment, developed telangiectasis of the cheeks and chin, with marked wrinkling. There was also considerable retraction of the gums. (Reported by Dr. H. H. Hazen.)

Miss S. (aged 32), Washington, D. C.—Developed marked wrinkling and telangiectasia of cheeks and chin, following Tricho treatment. (Reported by Dr. H. H. Hazen.)

Mrs. B. (aged 43), Washington, D. C.—Year after Tricho treatment, developed wrinkles and atrophy over entire cheeks and chin; also retraction of the gums in both upper and lower jaws. (Reported by Dr. H. H. Hazen.)

Miss M. (aged 30), Washington, D. C.—Following Tricho treatment, developed telangiectasis of the forearms and both sides of the legs from knee to ankle. Beneath the calf of the left leg, a depression two inches in diameter, nearly one-half inch in depth, with the surrounding skin for an area of nearly an inch stony-hard and immobile. Cheeks and chin showed numerous telangiectases and characteristic wrinkling and gums were markedly atrophied and retracted. (Reported by Dr. H. H. Hazen.)

Mrs. S. (aged 50), Washington, D. C.—Received about thirty Tricho treatments, the last one about three years ago. Face shows numerous telangiectases and some atrophy. (Reported by Dr. H. H. Hazen.)

Miss S. (aged 30), Washington, D. C.—Took twenty or twenty-five Tricho treatments, the last one two years ago. Anterior portion of cheeks and chin show marked wrinkling and numerous telangiectases, also some retraction of the gums. One feature of this case is the large number of small pits, resembling smallpox scars. (Reported by Dr. H. H. Hazen.)

Miss W. (aged 25), Washington, D. C.—Had about eighteen Tricho treatments, the last two years ago. Has developed pale telangiectases over anterior portion of cheeks and chin, with some wrinkling. Still has considerable superfluous hair left. (Reported by Dr. H. H. Hazen.)

Miss H. K. (aged 30), Milwaukee.—Fifteen Tricho treatments between July 1926 and April 1927. Treatments resumed and four exposures given between July 1 and September 11, 1927. In October 1927, patient first observed redness and pruritus, which increased in severity, resulting in painful ulceration and disability. In December 1928, hands and forearms showed cutaneous atrophy, telangiectasia and pigmentation, while both legs showed extensive injury from the knees to the feet, with telangiectasia, atrophy and pigmentation. A deep x-ray ulcer below the right knee; smaller ulcers below the left knee and a number of atrophic adherent scars of previously healed ulcers. Patient wholly disabled for work, bedridden, and suffering severely. (Reported by Dr. Harry R. Foerster.)

Mrs. I. C. (aged 27), Milwaukee.—Reported taking about ten Tricho treatments in 1925 in Bridgeport, Conn., for hairiness of thighs and legs. Some two years after exposure, telangiectasia first observed, steadily increased in severity, and involved skin became tender and at times painful. In January 1930, examination showed large angular patches of cutaneous atrophy and telangiectasia on the thighs and calves; hair growth persisted. (Reported by Dr. Harry R. Foerster.)

Miss E. M. (aged 20), Milwaukee.—Took Tricho treatments in Milwaukee in 1927 for hairiness of the face and chest. Reported twelve treatments to the face and sixteen to the chest, over a period of a year. In April 1929, there was cutaneous atrophy and telangiectasia between the breasts and on the lower part of the chest, and cutaneous atrophy and telangiectasia, with some hairiness persisting, on both lips and chin. (Reported by Dr. Harry R. Foerster.)

Mrs. S. H. D. (aged 44), Milwaukee.—Took Tricho treatment for hairiness of the chin. In September 1929, extensive telangiectasia and atrophy in the treated area. (Reported by Dr. Harry R. Foerster.)

Mrs. A. R. (aged 55), Milwaukee.—Received sixteen Tricho treatments, the last one in December 1928. In March 1930, telangiectasia, atrophy and fine hair growth in the treated areas of the face. (Reported by Dr. Harry R. Foerster.)

Mrs. E. F. M. (aged 26), Milwaukee.—Received ten Tricho treatments at weekly intervals, and then one treatment for three months between January 1927 and June 1930. Examination showed slight cutaneous atrophy and mild telangiectasia; coarse hair still present. (Reported by Dr. Harry R. Foerster.)

The brief case histories just given do not square with the statement made by Dr. Albert C. Geyser, that the production of keratoses is "physically and physiologically impossible with the Tricho System." Dr. Geyser has also declared: "The very fact that these machines are installed in beauty parlors and that the beauty parlor public is a hypercritical public, is prima facie evidence that this system of treatment is eminently satisfactory." It would be interesting to know just how many suits for damages have been brought by those who have undergone the Tricho treatment to find, later, to their sorrow that, in their endeavor to remove a minor blemish, they have incurred a major injury.

In glancing over the literature we discovered a few more cases, and brief abstracts of these are presented:

M. C., a woman aged 35, New York.—Tricho treatments for twenty-five weeks for hypertrichosis six years previously. Two years later, profuse and disfiguring telangiectasia developed beneath the chin and right cheek. (Reported by Dr. Howard Fox.[13])

White woman aged 24, Chicago.—Treated five years previously for superfluous hair on legs and arms by the Tricho system. The patient had two treatments a week for one year. Sclerodermatous areas, telangiectasia and ulceration resulted. (Reported by Dr. Edward A. Oliver.[14])

J. P., a white woman aged 22, St. Louis.—Superfluous hair on face removed by Tricho method three years previously. The patient presented dryness of skin on chin, atrophy and telangiectasia. (Reported by Dr. Clinton W. Lane.[15])

Miss H. T., New York.—Tricho treatments eight years previously. The patient had three treatments a week for one year for mild hypertrichosis of the chin and cheeks. Two years later atrophy and telangiectasia developed. The superfluous hair still present on the chin. (Reported by Dr. Henry Silver.[16])

J. N., a woman aged 28, New York.—Twenty treatments eight years previously for excessive growth of black hair on face. Six years later telangiectasia, scarring and a strawberry red tumor mass developed on right cheek. The mass was diagnosed as a spindle cell sarcoma. (Reported by Dr. Ira I. Kaplan.[17])

L. S., a woman aged 46, New York.—Fifteen years previously a course of Tricho treatments was given for excessive hair on both cheeks. Leathery skin, telangiectasia, ulcerations, and squamous-celled epithelioma developed. Histologic examination confirmed the diagnosis. (Reported by Dr. Ira I. Kaplan.[18])

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13. Fox, H.: Another Tricho Victim, J. A. M. A. **96**:1331 (April 18) 1931.
14. Oliver, E. A.: Dermatitis Due to "Tricho" Method, Arch. Dermat. & Syph. **25**:948 (May) 1932.
15. Lane, C. W.: Atrophy of the Chin and Upper Lip ("Tricho" Treatment), Arch. Dermat. & Syph. **23**:1154 (June) 1931.
16. Silver, H.: Extensive Telangiectasia Following Roentgen Therapy for Hypertrichosis, Arch. Dermat. & Syph. **26**:1163 (Dec.) 1932.
17. Kaplan, I. I.: Sarcoma of Cheek Following Tricho X-Ray Treatment for Hair on Face, J. A. M. A. **102**:595 (Feb. 24) 1934.
18. Kaplan, I. I.: Epithelioma of Cheek Developing 15 Years After Tricho X-Ray Treatment for Hair on Face, New York State J. Med. **43**:1758 (Sept. 15) 1943.

Within the past several weeks there appeared at the office of the senior author 4 Tricho patients:

1. E. B., a woman school teacher who had over fifty Tricho treatments about twenty-two years ago on the face, breasts, arms, legs and abdomen. There were all the classic signs of late radiodermatitis, including keratoses and epitheliomas. The patient has had several plastic operations, some quite extensive.

2. C. B., a housewife, had numerous Tricho treatments about twenty-four years ago on the face. Now she has typical radiation sequelae. On the right cheek there are a keratosis and changes associated with an early epithelioma.

3. M. T., a public health nurse, was treated about twenty-five years ago at the Tricho Institute in New York for the removal of hair from the face. There developed the typical conditions of radiodermatitis, particularly severe in the submental and submaxillary regions, where the sclerotic areas were constantly breaking down, forming small ulcerated areas. About one year ago she had a plastic operation.

4. T. C., a woman librarian, had received numerous treatments about twenty years ago at the Tricho Institute for removal of unwanted hair of the face, arms, legs, thighs and buttock. When seen fifteen years ago she had such painful ulcerations of the anterior and posterior surfaces of both thighs that she would be awakened screaming in the middle of the night. Plastic operations were performed immediately

These abstracts are representative of the cases which physicians have reported; no doubt there are many thousands of cases which have not been recorded. However, one need only glance over these cases to realize how dangerous roentgen rays can be when they are administered by inexperienced people for the permanent removal of hair. In fact, no method which includes the use of roentgen rays for the treatment of hypertrichosis should be approved, because, as MacKee and Cipollaro [4] have said, "it is now the consensus of dermatologists and roentgenologists that superfluous hair cannot be permanently removed with radiation of any kind, regardless of technic, without permanent injury to the skin." In another book by MacKee and Cipollaro [7] there is a photograph (fig. 84) on page 71 which illustrates the development of a squamous cell carcinoma in a patient who had received an x-ray burn during treatment at the Tricho Institute. In Dr. Kaplan's book [10] there is a photograph (fig. 196) on page 513 of a woman with a spindle cell sarcoma developing on an x-ray burn. This is another Tricho patient. She died as a result of the malignant disease. Is any more evidence necessary to prove that roentgen rays or other ionizing agents used for the permanent removal of hair are dangerous, cause radiodermatitis and, later, cancer and death?

A new monster is now lurking around the corner. It is because of this present and future danger that we have prepared this article, not because it is enjoyable to repeat the horror stories of the past which arose from the improper use of x-rays. The harm that was done to girls and young women in the twenties is about to be repeated now in the forties and fifties. It is hoped that the danger can be forestalled and girls and young women can be saved from the agonizing pain suffered by their sisters two decades ago. One can foresee that even boys and young men may be subjected to the same danger, because a patent has been issued for the "X-Ray Razor."

During 1946 there appeared articles in newspapers and magazines pertaining to the X-Ray Razor. The United States Patent Office on Nov. 20, 1943 issued to Violet Arnold, Detroit, patent number 2,389,403 for this method and apparatus for removing hair from the human body. The apparatus described in the patent is a low voltage (60-70 kv.) lightly filtered (0.5 to 1.0 mm. of aluminum) x-ray apparatus. One filter described in the patent consists of two laminated sheets of aluminum each 0.5 mm. in thickness with a space between them of 1 mm. for the purpose of holding water. The x-rays pass through this water and aluminum filter. To radiologists and to dermatologists there is nothing new either in the apparatus or in the method. The patent states that the object of the invention is to provide a treatment for the removal of hair from the human body without injury to the body tissue. Every experienced physician knows that this is impossible and that if the apparatus and method described in the patent are used there will be a repetition of the disastrous conditions experienced with the Tricho method. The immediate results of radiotherapy for hypertrichosis are always good. It takes months or years for radiodermatitis to develop, and it takes even longer for the keratoses, ulcerations, malignant growths and death to occur. It is to be hoped that the manufacturers of x-ray apparatus in this country will not produce equipment to sell to those endangering the health of American people with x-ray burns and cancer. It also behooves every physician in the country to be alert to this rebirth of the Tricho System, and it might be advisable to learn how this patent can be rescinded.

The Council on Physical Medicine has information that in Chicago there is a firm called the Keat Corporation which advertises a method of removing hair by "a simple light treatment." Presumably the same corporation is in business in Detroit and Des Moines and is contemplating opening offices elsewhere. Representatives of the American Medical Association, requesting information by mail and visiting the Keat Corporation, were unable to get definite information about the treatment. One young man who was treated by the Keat Corporation was examined by a Chicago physician, and it was found that the treatments administered did cause epilation of the bearded area. The only radiations that can cause epilation are ionizing radiations, and the meager information obtained by the American Medical Association representatives leads one to believe that the apparatus was an x-ray machine. The Keat Corporation, if allowed to grow, may cause even more damage than the defunct Tricho Institute. The local health authorities, the chambers of commerce, the Better Business Bureau, the legislative committees and all civic organizations concerned with the guarding of the health of the public should join forces and nip in the bud the spread of organizations using x-rays for the permanent removal of unwanted hair.

The members of the medical profession need to guard against still another possible health hazard. Radioactive isotopes emitting beta and gamma rays could be used for the local treatment of skin diseases. Some one might conceive the idea of applying to hairy parts solutions or other preparations of radioactive isotopes with the erroneous thought that these ionizing agents might have selective actions. There is no question whatever in the minds of physicians that radioactive isotopes can cause permanent defluvium of the hair but at the same time can so damage the skin that all the changes associated with a radiodermatitis, including the malignant changes, will be manifested. This is written not with the idea of predicting the use of radioactive isotopes for the treatment of hypertrichosis but with the idea of cautioning against the use of atomic energy for such treatment.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 North Dearborn Street - - Chicago 10, Ill.

Cable Address - - - - "Medic, Chicago"

Subscription price - - - - Eight dollars per annum in advance

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SATURDAY, OCTOBER 11, 1947

STUDY OF MOTOR VEHICLE FATALITIES

A special report on motor vehicle accident fatalities, just released by the National Office of Vital Statistics of the U. S. Public Health Service, considers data obtained by the Traffic Authority of the reporting states and from the death certificates filed in the Bureau of Statistics. This report for 1945 shows the number of such deaths that occur in hospitals and the duration of injuries prior to death, the types of fatal motor accidents, where they occurred, the residence of the victims and their age, sex and race. The states that provided this data included about 82 per cent of the opulation of the United States. The number of deaths orted on the special motor vehicle death transcript resented 81 per cent of motor vehicle accident deaths registered in the United States in 1945.

The largest number of accidents that caused deaths occurred in the late fall and early winter, more than one third of the fatalities resulting from accidents that occurred in October, November and December. More deaths resulted from accidents that occurred on Saturday than on any other day of the week. The curve of fatalities in rural areas followed the curve for miles of travel on rural roads for the first seven months of 1945, but this curve did not decrease with the decrease in travel in the last three or four months of the year. If inclement weather caused the divergence of the mileage curve and the death curves in the last third of the year, it is difficult to explain why January and February were not marked by comparatively large numbers of deaths. While in 1945 the rise in deaths began in August, the month in which gasoline was not rationed, and continued in each subsequent month, the mileage remained almost unchanged from August to December. The largest number of fatalities occurred between 6 p. m. and 7 p. m. The whole period from 5 p. m. to 9 p. m. was more hazardous than other similar parts of the day.

Collisions with pedestrians accounted for the largest number of fatalities, 39.5 per cent of the total. Collisions between motor vehicles accounted for 25.7 per cent of the total deaths for which the type of accident was stated. In 1941 each of these two types of accidents accounted for one third of the fatalities. The percentage of pedestrian fatalities for 1945 was an increase over that of 1941, while the percentage of collisions between motor vehicles represented a decrease. Passenger deaths accounted for 30.1 per cent and deaths of drivers for 28.5 per cent. Accidents which occurred on side streets or in residential areas, so-called nontraffic deaths, caused 141 deaths, most of which were in children 1 to 4 years of age. Beyond 19 years of age, in the majority of instances, the fatal nontraffic motor accidents occurred in an industrial area.

Health officers and administrators, traffic and safety engineers as well as others may gain information from this study that will help them devise means to prevent some of the thousands of motor vehicle deaths that occur in this country each year. Strict measures should be invoked particularly against accidents on industrial property and on home premises, the latter to be directed especially toward saving the lives of preschool children.

THE CLEVELAND INTERIM SESSION

By action of the House of Delegates the supplemental session of the American Medical Association, Cleveland, Jan. 5-8, 1948, will include not only the technical and scientific exhibits, which have come to be among the most important features of the Annual Session, but also a program of papers designed particularly as postgraduate education for general practitioners. The Council on Scientific Assembly, with Dr. Henry R. Viets of Boston as chairman, has prepared a program covering many of the topics now most prominently before the members of the medical profession.

The first morning's program will include papers on peptic ulcer, blood dyscrasias and the chronic invalid, with a panel discussion on posthospital care of patients with cancer. The program for the afternoon provides discussions on the treatment of the fat and the lean, cancer of the prostate and the use of BCG vaccine in the prevention of tuberculosis, with a panel discussion on uterine hemorrhage. At each of the panel discussions there will be ample opportunity for questions and answers.

The program for the second morning of the general practitioners' session will begin with a symposium on multiple injuries in automobile accidents, followed by a panel discussion on the treatment of pathologic conditions in adolescence. In the afternoon there is to be a panel discussion on the treatment of the healthy and sick diabetic patient, followed by papers on jaundice, the Rh factor and the interpretation of roentgen ray films of the chest.

Within the next few weeks The Journal will publish the details of this program, including the names of the distinguished medical educators and clinicians who will participate.

During the first two days of the session, when the House of Delegates will be holding its meetings, the Council on Industrial Health of the American Medical Association will be conducting a program devoted particularly to problems in its field. The complete program will be published soon.

Among the features planned for the Scientific Exhibit is a demonstration of the operation of a diagnostic cancer clinic, in which visiting physicians will be given opportunity to undergo themselves the routine of such an examination.

Another feature of the interim session in Cleveland will be the awarding for the first time of a gold medal to a general practitioner who has rendered exceptional service to his community. In these times, when almost everyone in the field of medicine recognizes the importance of the general practitioner in our medical scheme and the necessity that he be kept abreast of current progress, the Cleveland session should attract great numbers of the leading general practitioners of the United States..

THE AMERICAN LEGION CONSIDERS MEDICAL CARE

The following recommendations made by the National Medical Advisory Board of the American Legion were adopted by the National Convention of the American Legion held in New York, August 28-31:

1. That a suitable resolution be prepared by the National Rehabilitation Committee and submitted to the National Convention for their approval requiring the appointment or election of a Department Medical Advisor in every Department and a Post Medical Advisor in every Post, both to be doctors of medicine.

2. The establishment of an "American Legion Medical Forum of the Air," in cooperation with the national public relations division of the American Legion.

3. To the National Commander and to the Rehabilitation Executive Committee that the American Legion favors medical research in all its phases.

4. Continued effort to promote and enhance the American Legion's and American Legion Auxiliary's program on rheumatic fever and rheumatic heart disease and its volunteer cooperative effort with the American Council on Rheumatic Fever of the American Heart Association. The American Legion's action has already been productive of a well organized national program in rheumatic fever and rheumatic heart disease by the American Council on Rheumatic Fever of the American Heart Association.

5. That we approve of the residency program and the Dean's Committee as set up throughout the nation by the Veterans Administration and further recommend its extension to Veterans Administration outpatient clinics. We believe that this approach assures the veteran the best medical care possible. That the outpatient service, though good in many respects, should be improved and strengthened on a sound and lasting basis.

Adequate outpatient medical service should be made to meet the needs of the vast majority of sick veterans. In fact, in many instances this service is more important to the veteran than that obtained in hospitals. Improvement in the outpatient clinic is, in our opinion, a great factor in the reduction of the need for the hospitalization of the veterans who may need such treatment.

We believe consideration should be given by the Veterans Administration to the adoption of an intern service in the hospitals where it is appropriate and to the possibility of introducing clinical clerkships in the teaching hospitals and these to be under the direction of the resident staff members and the supervision of the Dean's Committee.

Since diagnosis and home treatment is the essence of clinical service, the residency program should involve training of all residents in the work of outpatient clinics.

Whereas the medical and surgical staffs of Veterans Administration hospitals will shortly be depleted by the loss of temporary assignments of military personnel, therefore, it is the recommendation of the Board that the Congress be petitioned to enact adequate legislation to permit internships in veterans hospitals.

6. That while we believe that the Veterans Administration hospital care, especially in larger hospitals, has improved and is in fine condition, yet we urge constant effort to keep that service at its highest efficiency.

7. The Board is cognizant from the reports of the Veterans Administration of the abuses that have occurred under the methods inaugurated by them in their endeavor to obtain the maximum amount of medical and dental care for the veteran under the home-town program in the time when the need is most pressing. However, it is now felt that many of these conditions that seem to be out of proportion to the situation as it now exists could be eliminated by a careful study by the medical and dental groups within the state which executed a contract for this service. In a project of such great magnitude abuses are bound to occur. Where evidence of such abuses is apparent, it is recommended that they be called to the attention of the licensing board in the state where they occur, and that a copy of this be submitted to the local county society concerned.

8. That in the treatment of veterans, it is a time proven fact that veterans in the professions understand and are peculiarly equipped to treat veteran patients because of their understanding born of their actual and common experience, and we therefore recommend that all members of the medical and dental professions who are veterans be given first consideration in the appointment and training under any program inaugurated by the Veterans Administration. The Board, however, realizes that the tremendous task of the care and treatment of veterans requires a greater number than the actual number of available veterans in these professions. Veterans preference should hold, however, for physicians, dentists and nurses, all other things being equal.

9. It is recommended to the Congress of the United States that when economy is to be practiced in the nation it should not be at the expense of the health of the veterans who saved the nation.

These recommendations are so important in relation to the policies and principles of the members of the American medical profession that they should be given most careful consideration by every physician.

Attention is called particularly to the third recommendation, which favors medical research in all its phases. The American Legion has developed a program on rheumatic fever and rheumatic heart disease and now has determined officially to continue this work and to enhance it. The support of the American Legion for the association of medical care in the Veterans Administration with medical teaching is a most progressive step, and it is recognized that the medical care program of the Veterans Administration is in process of evolution toward an even more efficient procedure.

Current Comment

FRACTIONATION OF SERUM PROTEIN

The electrophoretic method of protein fractionation appears to have become the standard of comparison for the older methods based on precipitation with neutral salts.[1] Serum proteins are separated on the basis of their rate of movement in an electric field, into the principal fractions, albumin and alpha, beta and gamma globulin; the albumin is the fastest moving compound, the gamma globulin the slowest moving. The fractionation obtained by precipitation with salt appears to be sensitive to the exact salt concentration employed; by choice of appropriate concentrations the albumin is made to correspond approximately with the electrophoretically determined albumin, the pseudoglobulin to the alpha and beta globulin and the euglobulin to the gamma globulin.[1] Thus it appears that salt fractionation may be used to give a fair approximation of the values obtained with the technically difficult electrophoretic method. The quantitative interpretation of electrophoretic data in terms of plasma protein concentration is complicated by the interference of lipid which migrates with the protein. Furthermore, the results obtained under different experimental conditions are not identical, and protein fractions appear at times to be bound together so that clear separation is not possible. A new approach to electrophoretic analysis which may partially overcome these interfering influences consists in preliminary fractionation with alcohol.[2] By means of this technic it has been found that the alpha and beta globulin of the blood of the rat are increased after thermal injury, and it appears that this may be a general response to tissue injury. Continued study of the proteins of serum promises to give a more complete understanding of the physiologic role of the various fractions.

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[1] Majoor, C. L. H.: J. Biol. Chem. **169**: 583 (Aug.) 1947. Milne, J.: J. Biol. Chem. **169**: 595 (Aug.) 1947.

[2] Gjessing, E. C., and Chanutin, A.: J. Biol. Chem. **169**: 657 (Aug.) 1947.

TUBERCULOSIS IN OLDER AGE GROUPS

The belief seems prevalent that tuberculosis is a disease of youth or of comparative youth and that persons over 50 are seldom infected. Osler, whose "Principles and Practice of Medicine" perhaps more than any other single book has influenced medical thought in recent decades, states that although one seventh of the human race dies of tuberculosis, "a large proportion of all individuals become infected before reaching adult life." In Christian's 1947 revision of Osler's book, the statement appears that "no age is exempt. The disease is met with in the suckling and in the octogenarian, but fatal tuberculosis . . . is more common between the eighteenth and thirty-fifth years." According to necropsy experience, notably that of Medlar [1] at Bellevue Hospital, pathologically significant tuberculosis in persons under 40 is recognized clinically in a high proportion of all cases, while in those over 50 considerable numbers of cases occur but are overlooked clinically. In other words, in many tuberculous patients over 50 insufficient precautions are taken to prevent the spread of tuberculosis by these innocent carriers of tubercle bacilli. Medlar suggests that a method of approach to a solution of this problem would be the making of chest roentgenograms of all patients over 50 admitted to hospitals, regardless of other conditions. He states that all patients in "whom shadows are thought to be tuberculous in nature should have careful study by serial roentgenograms and for the discharge of tubercle bacilli, regardless of the first impression as to the significance of such shadows."

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[1] Medlar, E. M.: The Incidence of Pathologically Significant Tuberculosis in Routine Necropsies in Private and Public Hospitals: A Comparison of the Two Periods 1916-1920 and 1940-1945, New York State J. Med. **47**: 582, 1947.

ELECTROLYTE LOSS IN DEHYDRATION

Many pediatricians have been the first to call attention to important biochemical problems and to the most effective means of solving them. A notable example of the latter tendency is the success with which Darrow and his associates at Yale, and for a period in Texas, have approached the problem of biochemical change in dehydration. This problem arose from the appalling mortality associated with infant diarrhea. In his William Buchanan Lecture,[1] Darrow emphasizes dehydration as the chief clinical feature of infant diarrhea and goes on to show that the dehydration is accompanied with unsuspected electrolyte shifts. Particularly important is the discovery of the magnitude of the loss of potassium from the cells of the body. This loss results in a series of secondary physiologic disturbances which may result in severe complications or death. It is not enough merely to attempt to restore water in dehydration. Careful attention must be paid to the disturbance in electrolyte balance, and fluid must be administered in such a way as to restore the electrolyte balance along with the water balance. The imbalance of electrolytes may be a prime factor in food intolerance. Darrow recommends a solution composed of 4.4 Gm. of sodium bicarbonate per liter, 2.7 Gm. of potassium chloride per liter and 3 Gm. of sodium chloride per liter. This solution contains more bicarbonate than serum, but less sodium, and about the same amount of chloride. The potassium concentration, however, is almost ten times that found in serum. This solution may be administered by continuous intravenous drip diluted in the ratio of 1 part to 2 parts of 5 or 10 per cent dextrose. The injection rate in infants should be at the rate of about 80 to 100 cc. per kilogram during the first twenty-four hours. The mortality from infant diarrhea has been greatly reduced by this treatment. These observations suggest the importance of a study to determine whether or not similar shifts in potassium occur in cases of dehydration associated with surgery. Among other problems associated with dehydration and electrolyte disturbances there may be an effect on enzyme systems. As in other instances in medicine, this significant advance calls attention to the need for many more studies.

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[1] Darrow, D. C.: Advances in the Treatment of Diarrhea in Infants, Tex. Rep. Biol. & Med. **5**: 29 (spring) 1947.

ORGANIZATION SECTION

Official Notes

EIGHTH ANNUAL CONGRESS ON INDUSTRIAL HEALTH

The Council on Industrial Health will hold its Eighth Annual Congress on Industrial Health in the Cleveland Auditorium, Cleveland, on January 5 and 6, 1948 These dates, immediately precede the Interim Session of the American Medical Association, which will be held in the Auditorium on January 7 and 8. General practitioners supply a large part of the medical services which workers receive through industry, and they are cordially invited to attend these industrial health sessions. The program of the Congress is being constructed with general practitioners in mind and will include discussions of first aid and emergency services in industry, physical examinations, administrative practices, applied physiology, aviation medicine, radiation medicine and practical expositions of occupational disease management, traumatic surgery and rehabilitation. Since full use of medical services in industry depends on support from management and the worker, the essential relationships will be discussed. Industry needs medicine as a practical ally and to promote human relations. The Industrial Health Congresses are intended to further these objectives.

Washington Letter

(From a Special Correspondent)

Oct. 9, 1947.

Dr. Vannevar Bush to Coordinate All Military Research

President Truman has appointed Dr. Vannevar Bush chairman of the new Research and Development Board to take charge of all military research performed by the three service arms under the new unified defense command Dr. Bush was former chairman of the Wartime Office of Scientific Research and Development. He contributed to development of the atom bomb. John R. Steelman, assistant to the President, submitted the second in a series of five reports on "Science and Public Policy" to Mr. Truman as head of the President's Scientific Research Board. The report showed that the nation is spending $1,100,000,000 a year on science, including funds of the government, industry and educational institutions. It was estimated that more than $2,000,000,000 a year must be spent by 1957 if the United States is to keep abreast of scientific developments. The board stressed the need of military research during an "uneasy" world situation and mentioned that research of sixteen government agencies includes work of special interest to the members of the medical profession. The Naval Research Laboratory is working on separation of uranium isotopes. The U. S. National Museum is studying the effect of radioactivity on animal and plant life.

Taft Announces that GOP Will Seek Welfare Legislation Next Session

Senator Taft, Ohio Republican and contender for the GOP presidential nomination, told an Oregon audience on his current Western tour that a billion-dollar-a-year program of welfare legislation would have Republican party support and "would and should proceed" at the next session of Congress. He said that the program must be free of federal bureaucratic controls and must be administered at state and local levels on a basis of "federal assistance and not regulation." Senator Taft included in the field of necessary welfare legislation the review and supplementation of old age insurance; increased unemployment compensation under continued state control; more work relief limited to emergencies; a state-aid health plan to cost about $200,000,000 yearly, by which states could obtain free medical and hospital assistance for "those unable to pay for it"; encouragement of voluntary health funds; subsidized housing for those in the lowest income groups, confined to about 10 per cent of all new construction; federal aid to education so that at least a minimum education is provided for every child born in the United States.

Infantile Paralysis Sends Dr. Sabin to Germany to Study Polio Outbreak

Basil O'Connor, president of the National Foundation for Infantile Paralysis, announced that Dr. Albert B. Sabin, professor of research pediatrics, University of Cincinnati, had gone by air to Germany to investigate a severe outbreak of poliomyelitis. His purpose is to prevent spread of the crippling disease to the American occupation forces. Lieut. Gen. Lucius D. Clay, commander of the United States forces in Germany, had wired for services of an epidemiologist to advise on control methods.

Coming Medical Meetings

Conference of State Medical Society Secretaries and Editors, Chicago, A.M.A. Headquarters, Nov. 7-8. Dr. George F. Lull, 535 N. Dearborn St., Chicago 10, Secretary.

American Academy of Ophthalmology and Otolaryngology, Chicago, Palmer House, Oct. 12-17. Dr. W. L. Benedict, 102 Second Ave. S.W., Rochester, Minn., Secretary.

American Association of Railway Surgeons, Chicago, Nov. 23-25. Dr. Raymond B. Kepner, 547 West Jackson Boulevard, Chicago 6, Secretary.

American Clinical and Climatological Association, Colorado Springs, Oct. 13-15. Dr. James Bordley III, Johns Hopkins Hospital, Baltimore 5, Secretary.

American Otorhinologic Society for the Advancement of Plastic and Reconstructive Surgery, New York, Nov. 13. Dr. Norman N. Smith, 291 Whitney Ave., New Haven 11, Conn., Secretary.

American Society for the Study of Arteriosclerosis, Chicago, Hotel Knickerbocker, Nov. 2-3. Dr. O. J. Pollak, Wilmington General Hospital, Wilmington 14, Delaware, Secretary.

American Society of Anesthesiologists, New York, Hotel New Yorker, Dec. 4-5. Dr. Curtiss B. Hickcox, 745 Fifth Ave., Room 1503, New York 22, Secretary.

American Society of Clinical Pathologists, Chicago, Drake Hotel, Oct. 28-30. Dr. A. S. Giordano, 531 N. Main St., South Bend, Ind., Secretary.

American Society of Tropical Medicine, Atlanta, Ga., Dec. 2-4. Dr. Norman H. Topping, National Institute of Health, Bethesda 14, Md., Secretary.

Association of American Medical Colleges, Sun Valley, Idaho, Oct. 27-29. Dr. Fred C. Zapffe, 5 S. Wabash Ave., Chicago, Secretary.

Association of Military Surgeons of the United States, Boston, Nov. 13-15. Col. James M. Phalen, Army Medical Museum, Washington 25, D. C., Secretary.

Central Neuropsychiatric Association, Galveston, Texas, Oct. 17-18. Dr. William C. Menninger, 3617 W. Sixth Ave., Topeka, Kans., Secretary.

Delaware, Medical Society of, Wilmington, Oct. 13-15. Dr. John F. Hynes, Memorial Hospital, Wilmington, Secretary.

Indiana State Medical Association, French Lick, Oct. 28-30. Mr. Ray E. Smith, 23 E. Ohio St., Indianapolis 4, Executive Secretary.

Inter-State Postgraduate Medical Association of North America, St. Louis, Public Auditorium, Oct. 14-17. Dr. Tom B. Throckmorton, 406 Sixth Ave., Des Moines, Iowa, Secretary.

New England Postgraduate Assembly, Boston, Copley-Plaza Hotel, Oct. 29-31. Dr. Leroy E. Parkins, 8 Fenway, Boston 15, Chairman.

New York State Association of Public Health Laboratories, Albany, Nov. 7. Miss M. B. Kirkbride, New Scotland Ave., Albany 1, Secretary.

Oklahoma City Clinical Society, Oklahoma City, Biltmore Hotel, Oct. 27-30. Dr. Elmer R. Musick, 512 Medical Arts Bldg., Oklahoma City, Director of Clinics.

Omaha Mid-West Clinical Society, Omaha, Oct. 27-31. Dr. John M. Thomas, 1031 Medical Arts Bldg., Omaha 2, Secretary and Director of Clinics.

Post Graduate Medical Assembly of South Texas, Houston, Texas, Coliseum, Dec. 1-3. Dr. E. Trowbridge Wolf, 229 Medical Arts Bldg., Houston, Texas, Secretary.

Radiological Society of North America, Boston, Nov. 30-Dec. 5. Dr. Donald S. Childs, 607 Medical Arts Bldg., Syracuse 2, N. Y., Secretary.

Seaboard Medical Association of Virginia and North Carolina, Virginia Beach, Va., Dec. 2-5. Dr. Clarence Porter Jones, 3117 West Ave., Newport News, Va., Secretary.

Southern Medical Association, Baltimore, Nov. 24-27, Mr. C. P. Loranz, Empire Bldg., Birmingham 3, Ala., Secretary.

Southern Psychiatric Association, Birmingham, Ala., Oct. 13-14. Dr. Newdigate M. Owensby, 384 Peachtree St. N.E., Atlanta, Ga., Secretary.

Southwestern Medical Association, Phoenix, Ariz., Hotel Westward Ho, Nov. 6-8. Dr. Louis W. Breck, 116 Mills St., El Paso, Texas, Secretary.

Virginia, Medical Society of, Roanoke, Oct. 13-15. Miss Agnes V. Edwards, 1200 E. Clay St., Richmond 19, Secretary.

Western Surgical Association, Colorado Springs, Broadmoor Hotel, Dec. 4-6. Dr. Warren H. Cole, 1853 West Polk St., Chicago 12, Secretary.

GOVERNMENT SERVICES

VETERANS ADMINISTRATION

ESTABLISH SECTION OF RADIOISOTOPES

The chief medical director of the Veterans Administration and those of his staff responsible for the activities of the Research and Education Service desire to bring to the veterans, in the fullest measure and at the earliest time possible, the benefits of an "atomic era" in medicine. To provide direction for such an activity within hospitals of the Veterans Administration, the chief medical director has established a section on radioisotopes within the Research and Education Service of the central office. To implement this program, the chief of the radioisotope section will assume responsibility for overall coordination and supervision, and a Central Advisory Committee on Radioisotopes will make recommendations as to general policy and establish specific safety measures to be observed.

At six hospitals of the Veterans Administration radioisotopes will be employed during the current fiscal year in accordance with the recommendations of the Central Advisory Committee on Radioisotopes. These hospitals are uniquely situated with respect to university groups participating in the medical activities of the Veterans Administration, and representatives of these institutions are engaged in the use of radioisotopes within their university. It is possible, therefore, to have the program within the individual Veterans Administration hospital under the responsible direction of professional qualified personnel who in turn have associated with them a team of the various types of consultants required for such a program.

At each of the six hospitals the program will be under the general cognizance of a Committee on Radioisotopes which in turn will be a subcommittee of the Dean's Committee for that hospital. In this manner the relationship of the radioisotope program to the universities will be similar to that for medical care and for the educational program within the hospitals of the Veterans Administration.

The chief medical director desires that a sound radioisotope program be developed as quickly as good judgment and the availability of qualified personnel permit. To serve as chief, radioisotope section, in the central office Dr. George M. Lyon, Huntington, W. Va., has been appointed. To serve on the Central Advisory Committee on Radioisotopes the following have been appointed: Dr. Hugh J. Morgan, professor of medicine, Vanderbilt University School of Medicine, Nashville, Tenn.; Dr. Stafford L. Warren, professor of biophysics and dean, University of California Medical School, Los Angeles; Dr. Shields Warren, professor of pathology, Harvard Medical School, Boston; Dr. Hymer L. Friedell, professor of radiology, Western Reserve University School of Medicine, Cleveland, and Dr. Perrin H. Long, professor of preventive medicine, Johns Hopkins University School of Medicine, Baltimore. The hospitals of the Veterans Administration that will have active radioisotope programs during the current fiscal year are situated at Framingham, Mass.; Bronx, N. Y.; Cleveland; Chicago; Minneapolis, and Los Angeles.

TRAINING FOR HOSPITAL LIBRARIANS

A thirty day nationwide training program is being conducted by the Veterans Administration to acquaint its hospital librarians with the latest trends in medical library practices. The program will be under the supervision of Francis R. St. John, director of the Veterans Administration's library service, who said special training is necessary because of the acute shortage of medical record librarians. This phase of library work, he said, requires knowledge of medical literature as well as specialized technics in medical reference work, bibliography and research. With the ever increasing number of patients, the VA medical service requires medical libraries as a part of the facilities available to the medical staffs of its hospitals. To carry out the instruction of librarians, regional meetings were held in September in New York and will be held in October in St. Paul, Denver, St. Louis and Atlanta, Ga. These regional meetings will also serve to coordinate procedures in buying books, and in obtaining them faster and on a more economical basis.

SPECIAL PROGRAM OF AURAL REHABILITATION

The Veterans Administration has established a special program of medical rehabilitation to help overcome impairments in hearing suffered by about 30,000 veterans of World War II. The rehabilitation course includes a series of hearing and speech tests, the selection and fitting of a hearing aid if indicated, auditory training, instruction in lip reading and speech correction if necessary. Contracts have been made with some twenty-seven universities, clinics and institutions, and aural rehabilitation centers have been set up to give all or part of the complete rehabilitation course; in addition the complete course is also available at the Veterans Administration's New York regional office. If special surgery is required the operations will be performed at VA hospitals at Los Angeles and San Francisco and at the naval hospitals at Philadelphia and Bethesda, Md.

THE DOCTOR'S BILL

The following is an excerpt from an address by Dr. Paul R. Hawley, chief medical director of the Veterans Administration, given before the American War Dads at Fort Worth, Texas, September 29:

> Now, what is the doctor's bill that the government has to pay for the veteran? It varies a penny or two each month, but not more. In the month of June, which is the latest month for which I have complete figures, the total doctor cost—and this includes resident physicians, full time VA physicians, and all part time physicians and consultants, every doctor that has anything to do with our hospitals—the total doctor cost in our general medical and surgical hospitals, which are the most expensive to operate, was $1.47 per patient per day—exclusive of course of food and all other expenses. Think of this! This means that, if a veteran goes into one of our hospitals for appendicitis and is operated on and stays in the hospital for ten days, his bill for actual physicians' services, paid by the government, is only $14.70. Can you fathers and mothers buy even the cheapest medical service at such a ridiculous price? And, in most of our hospitals, even the millionaire cannot buy more and better doctors at any price, because this buys not only the surgeon that takes out the appendix but also the doctors who assist in the operation, the doctor who gives the anesthetic, the doctor who operates the laboratory which made the blood counts, the doctor who took the x-rays (if any were necessary) and the doctor who dressed the incision until it healed. I think you will agree that we are getting doctors' care at bargain prices.
>
> Our doctor cost, exclusive of other costs, is even less in our other two types of hospitals. In tuberculosis hospitals, it is 88 cents per patient per day; and in our mental hospitals it is the ridiculously low figure of 36 cents per patient per day. Can anyone want us to be more economical than that?
>
> But economy is only our secondary objective. Quality is our first objective, and will always be our first objective, so long as I have anything to do with this service. However, it so happens that the same factor which gives us quality in medical care also promotes economy in the cost of medical care. If we did not have residents in training in our hospitals, we would have to have almost the same number of full time VA staff physicians to replace them; and the salary paid a resident in training is not more than one-half that which we would have to pay for a full time VA physician to do exactly the same work. The reason for this is that a large part of the compensation of the resident is paid in terms of the training and experience he gets—and not in *money. Thus the resident profits, the* patient profits greatly and the government saves money. It is about the only business in the world where you get something for nothing.

HOSPITAL NEWS

The Veterans Administration has announced presidential approval of a 19.5 acre site for a five hundred bed hospital in Indianapolis adjacent to Indiana University.

PHYSICIANS SEPARATED FROM SERVICE

ARMY MEDICAL CORPS OFFICERS RECOMMENDED FOR/OR RELIEVED FROM ACTIVE DUTY

Alabama

Branch, John L.............Montgomery
Burson, Elkanah G. Jr...........Furman
Camp, William A...............Cullman
Collier, James P..............Tuscaloosa
Collins, Chalmers ...
Corbitt, Jack..........
Dodson, Marion H................Mobile
Grobman, Martin E...........Tuscaloosa
Herndon, Harry V...............Jemison
Hodges, Leonard I................Fayette
Morgan, Perry A. Jr.........Birmingham
Morton, Edwin D............Birmingham
Penton, John R. Jr..........Montgomery
Till, Harry J.......................Elmore
Weathington, Warren T...........Boaz

Arizona

Neff, Bayard L..................Mesa
Orlando, William F..............Kingman
Rice, Alfred G..................Chandler
Wicks, William J................Phoenix

Arkansas

Browne, Paul Z..............Hot Springs
Byrd, Lucas M. Jr...........Little Rock
Carter, James R.............Little Rock
Ellis, Columbus R............Little Rock
Noell, Livingston P. Jr...........Newport
Smith, Charles M.................Paris
Warford, Walton R..........Little Rock

California

Archibald, Herbert Lee.........Anaheim
Bledsoe, Raleigh C.........Los Angeles
Bricca, Constantine R......San Francisco
Buell, Arthur H.............Long Beach
Campbell, Clayton C. Jr......Long Beach
Cane, Edward M............Los Angeles
Canfield, Merritt C............El Centro
Chalian, Alexander R..........Oakland
Chinnock, Robert Fisher....Los Angeles
Conner, Lyman H..............Burbank
Coodley, Alfred E...........Los Angeles
Cornell, Roy Sexton.......Los Angeles
Crutchett, William L...........Palo Alto
Fineberg, Joseph............Los Angeles
Fitzgerald, John Francis......Richmond
Foley, Maurice P...........Los Angeles
Gannon, William A.............Pasadena
Hanson, Virgil...............Los Angeles
Howard, Allan H...........Los Angeles
Jackson, Donald D..............Alameda
Jagd, Wilfred D............Los Angeles
Jenny, Elliott R..............Hollywood
Jones, Ellis Wm., Jr........Los Angeles
Kinsbery, Lloyd B..........Los Angeles
Leonard, John R..........San Francisco
Linden, Maurice E..........Los Angeles
Loewen, Leland S..........Los Angeles
Luckey, Clarence A............Oakland
McNeil, Robert J...........Los Angeles
Moss, Charles N.............San Rafael
Mumford, Robert S..........Los Angeles
Newland, John E.........Santa Barbara
Parkinson, Harold O......San Francisco
Peters, George E..............Richmond
Ray, Robert D..................Berkeley
Riordan, Daniel C.........San Francisco
Sedwick, Darrell S............Cupertino
Sellers, Alvin L...........San Francisco
Shull, William G..............San Gabriel
Snowden, Vernon L...............Exeter
Solberg, Lawrence A.............Eureka
Solter, Nathan.............San Francisco
Steckel, Morris L..........Los Angeles
Stetson, Rodney A............Bakersfield
Strahle, Frederic Evens.......Alhambra
Strum, Avery E.....Yosemite Natl. Park
Stuppy, Laurence J........Los Angeles
Sweeny, Joseph B........San Francisco
Sweigert, Charles F......San Francisco
Todgrovic, Dragutin D...........Macdoel

California—Continued

Truitt, Ralph M.............Loma Linda
Wilson, Arnold W..........Los Angeles
Wilson, Frances N.............San Jose
Woelfel, Gerard A.........San Francisco
Worthen, Willard F..........San Mateo
Zukin, Paul..................Los Angeles

Colorado

Bull, Heman R...........Grand Junction
Dybdahl, Chris Jr.................Denver
Gardell, John E...................Denver
Haney, Lawrence O....Colorado Springs
Johnson, Frank C..............Denver
Soland, Louis W..............Ft. Lupton
Stark, Merritt W...............Shawnee
Whiteley, Philip W...............Denver
Wright, Walter L..............Denver

Connecticut

Bunce, James M.................Hartford
Frey, Cornelius Paul.......New Haven
Frothingham, John G.......New Canaan
Lavietes, Paul H............New Haven
Spencer, Samuel.............Bridgeport

District of Columbia

Blundon, Kenneth E.........Washington
Brigulio, Alfred.............Washington
Burch, Warren B............Washington
Chappell, Ewin S............Washington
Egan, John R...............Washington
Fawcett, John G.............Washington
George, George P...........Washington
McKaig, Malcolm C.........Washington
Nunez, Bernard E...........Washington
Sorrell, William G..........Washington

Florida

Burbacher, Charles R.......Coral Gables
McCall, Joel V. Jr.............Jennings
Lake, Ralph C.............Haines City
Overman, William J.............Bagdad
Porter, Harry W...........Jacksonville
Smith, Wm. K........West Palm Beach

Georgia

Calhoun, Ferdinand P............Atlanta
Girtman, Louie F...............Augusta
Griffin, Eugene Leonard..........Augusta
Hames, Curtis G.................Claxton
Johnson, Albert S. Jr..........Elberton
Johnson, Ralph N.................Rome
Mincey, Rollo J. Jr...............McRae
Osteen, Wentworth L...........Augusta
Quattlebaum, Robert B.........Americus
Rieser, Charles E...............Atlanta
Sawyer, James L...............Folkston
White, William O...............Augusta
Woody, Edgar Jr...........Thomasville
Worth, Jack J. Jr...............Atlanta
Youngblood, Samuel Jr........Savannah

Idaho

Hearne, Walter R..............Pocatello
Jones, Arthur C. Jr..............Boise
Miller, David C.......Lava Hot Springs

Illinois

Albus, William R...............Chicago
Block, Matthew H...............Chicago
Brockman, Seymour J...........Chicago
Brown, Roy W..................Berwyn
Campbell, James A...............Minonk
Chornyak, John.................Chicago
Cravens, James H............Collinsville
Driscoll, Edward T..............Chicago
Duerme, Francisco M............Chicago
Freeman, Wendel R..........Champaign
Fringer, Robert C..............Rockford
Gross, Frank F..................Chicago
Guemmer, Gerald E........New Holland
Gumbiner, Stanley H.............Chicago

Illinois—Continued

Handy, George H...............Chicago
Hollender, Marc H............Chicago
Johnsen, Carl E. Jr...........Winnetka
Johnston, Charles W...........Waverly
Jones, Alexander James.......Chatham
Jones, Frank William..........Chicago
Ketchum, William F..........Evanston
Koczur, Joseph L. Jr...........Chicago
Krasnow, Sheldon E.............Chicago
Lake, Richard A................Chicago
Lestina, Frederic A...............Cicero
McVey, Emerson K.............Chicago
Morgan, Clinton W. Jr.........Lombard
Morrison, Robert E.............Chicago
Neff, Emery B...................Moline
Nussbaum, William W..........Chicago
Olwin, John H.................Robinson
Orcutt, William H..............Chicago
Payne, John W.................Danville
Plotkin, Paul...................Chicago
Ramsay, David C................Chicago
Riedel, Henry A.................Chicago
Schick, Walter R................Chicago
Siegel, Irving....................Chicago
Simon, Sylvan W...............Chicago
Simonian, George S...........Waukegan
Smith, Carleton R...........Villa Grove
Smith, Eugene.................Belleville
Smith, Herschel S...........E. St. Louis
Solbrig, Charles R..............Chicago
Spiegel, John P.................Chicago
Spivek, Mandel L...............Chicago
Stanelle, Wilbur F........Shawneetown
Stein, Benjamin F.......Mount Carmel
Stevens, Philip H...............Chicago
Stoelting, Jean L..............Marshall
Sugar, Hyman S.................Chicago
Swirsky, Albert..................Chicago
Topper, Herbert A...............Chicago
Vacco, Richard J................Chicago
Walker, James Jr...............Hinsdale
Weiland, Richard J...............Aurora
Yovaish, Walter.................Paxton

Indiana

Baran, Charles J....................Gary
Calvert, Raymond R...........Lafayette
Chattin, Herbert O............Vincennes
Ellis, Harry D...............Indianapolis
Garber, J. Neill..................Dunkirk
Hutto, William H................Kokomo
Jones, Francis P.............Indianapolis
Jurgensen, Walter T.........Fort Wayne
Lawrence, Sanford H............Kokomo
McGrath, Michael F.........Indianapolis
Mohler, Floyd W..................Elkhart
Nahrwold, Elmer W.........Fort Wayne
Noe, William R..................Lebanon
Olvey, Ottis N................Noblesville
Owsley, Robert W..........Hartford City
Scott, Ivan W..................Shelbyville
Smith, Philip L........North Manchester
Stepleton, John D...........Indianapolis
Stover, Wendell C.............Boonville
Visher, John S.................Evansville
Warriner, James B........Michigantown
Young, Claude C. Jr...........Evansville

Iowa

Bastron, James A...............Ottumwa
Bliss, William R.....................Ames
Burdick, Francis D.........Shenandoah
Eastwood, Douglas W.......Washington
Gonner, James A.............Burlington
Hentel, William.................Knoxville
Huber, Robert A............Charter Oak
Intress, Robert H....................Eldon
MacGregor, John K..........Iowa City
Merillat, Herbert C..........Des Moines
Merkel, Byron M............Des Moines
Neufeld, Robert J...............
O'Keefe, ...

PHYSICIANS SEPARATED FROM SERVICE

Iowa—Continued

Pratt, Elmer B.	Mount Vernon
Stauffer, Leland W.	Iowa City
Wolf, William J.	Staceyville

Kansas

Arst, Daniel B.	Wichita
Bauer, Donald deF	Topeka
Bolinger, Robert E.	Wichita
Bowersox, Warren A.	Topeka
Frederick, MacFloyd	Sterling
Friesen, Carl M.	Hillsboro
Galloway, Philip L.	Anthony
Johnson, Joseph H.	El Dorado
Laham, Alexander J.	Wichita
Swan, Otis D.	Topeka
Wien, Irving A.	Kansas City

Kentucky

Barrow, David W.	Lexington
Hart, James C.	Murray
Norvell, Charles W.	Louisville
Osburn, Robert P.	Louisville
Rankin, Charles E.	Lexington
Robins, George M.	Louisville
Stine, Frederick, A.	Ft. Thomas
Strode, Ernest C.	Louisville
Widener, George H. Jr.	Franklin
Williams, Thomas K. Jr.	Paducah

Louisiana

Briley, Wilfred J.	Opelousas
Buechner, Howard A.	New Orleans
Chappuis, Jack Emile	Rayne
Diaz, Joseph A.	New Orleans
Fancher, James R.	New Orleans
Good, Richard W.	Alexandria
Greishaber, Frederick C.	New Orleans
Guilbeau, Eric Edor Jr.	Lafayette
Jolly, Henry W. Jr.	Baton Rouge
Lawrence, Wilbert	Alexandria
[illegible]nch, Robert C.	New Orleans
[illegible]x, Frank G.	New Orleans
Rice, Irwin J.	Shreveport
Sorrells, John E.	Iowa
Wright, George H.	Shreveport
Yeatts, Roy O.	New Orleans

Maine

Covey, Wilton W.	North Berwick
Gould, George I.	Biddeford
Hubbard, John F.	Waterford
Olore, Louis	Presque Isle

Maryland

Borden, Jesse N.	Baltimore
Campbell, Robert V.	Hagerstown
Cheney, William S.	Baltimore
Ehrlich, Daniel	Baltimore
Follis, Richard H. Jr.	Baltimore
Garrett, Richard M.	Baltimore
Gregory, John E.	Baltimore
Grose, William E.	Baltimore
Hagan, William B.	Baltimore
Harris, William Myrick	Lonaconing
Janney, Nathan	Baltimore
Kaplan, Irving	Baltimore
Krieg, Edward L. J.	Reisterstown
Lerman, Philip Harry	Baltimore
Nesbitt, John A. Jr.	Baltimore
Patrick, George B. Jr.	Chevy Chase
Sprehn, George W.	Takoma Park
Steiner, Albert	Baltimore
Stifler, William C. Jr.	Baltimore
Stowell, Averill	Baltimore
Strayer, Webster M.	Baltimore
Wich, Joseph C.	Baltimore
Wooden, Allen Curtis	Baltimore
Worgan, David K.	Luke

Massachusetts

Bagnall, Richard S.	Groveland
Beaman, George B.	Wellesley Hills
Bergner, Robert P.	Arlington
Brackley, Joseph E.	Boston

Massachusetts—Continued

Buckley, John L.	Southbridge
Burchenal, Joseph H.	Brookline
DeFriez, Albert I. C.	Brookline
Doonan, James M.	Lynn
Eklund, William J.	Winchester
Fuchs, Job E.	Brookline
Goodwin, Paul	Clinton
Grulee, Clifford G. Jr.	Boston
Hagler, Sumner	Kenberma
Haller, Theodore H.	East Dennis
Janzen, Arnold Herbert	Wollaston
Kiarsis, Victor	Haverhill
Landry, Christopher L.	Boston
Lewis, James	Westfield
Mostofi, Fathollah K.	Boston
Munsey, Franklin A.	Swampscott
Nalband, Edward H.	Watertown
Orlov, Morton	Roxbury
Page, Emil G.	East Boston
Randall, Guy Charles	Waltham
Reagan, Daniel J.	Cambridge
Rhinelander, Frederic W.	Jamaica Plain
Rice, Willard G.	Cambridge
Schuck, Carl A.	Jamaica Plain
Smith, John E.	E. Weymouth
Souders, Carlton R.	Brookline
Stern, Arthur	Worcester
Thornton, John S.	Dorchester
Tyler, Robert L.	Taunton
Vazquez-Milan, Hiram	Boston
Watkins, Eugene L.	Worcester
West, George VanTassel	Woburn
William, Harry G.	Bedford
Wolf, Julius	Roxbury
Worthen, Charles A. Jr.	Lynn
Young, Alexander J.	Pittsfield

Michigan

Bowden, William S.	St. Clair
Brandel, John M.	Owosso
Cabanzo, Jose Nemesio	Detroit
Dubuar, C. L.	Grosse Pointe Woods
Fink, Victor Herbert	Ramsay
Finton, Robert E.	Jackson
Foster, David Bernard	Ann Arbor
Gibert, John G.	Flint
Gingrich, Gerald W.	Grand Rapids
Gudes, David S.	Detroit
Hauser, Frederick V.	Ann Arbor
Jend, William J.	Highland Park
Jordan, Paul H.	Ann Arbor
Kowaleski, Edward H.	Detroit
Mattson, Theodore M.	Negaunee
Neeb, Walter G.	Detroit
Northrop, Arthur K. Jr.	Detroit
Scholten, Roger A.	Kalamazoo
Sheldon, John M.	Ann Arbor
Smith, George E.	Detroit
Sorkin, Samuel S.	Flint
Stefanowski, Philip K.	Detroit
Stein, Edward	Detroit
Stolberg, Carl A.	Ludington
Torres, Raul M. Jr.	Eloise
Watts, John C.	Detroit
Wehner, Merle E.	Lansing
Wright, Edwin M.	Dexter
Wright, Robert R.	Detroit
Zukowski, Henry J.	Detroit

Minnesota

Bennett, Warren A.	Rochester
Benson, Ellis S.	St. Paul
Carlisle, Joseph D.	Minneapolis
Fetterly, Warren	Minneapolis
Jenson, James E.	Milan
Jordan, John H.	New Ulm
Kaplan, Harold A.	North Minneapolis
Kozarek, Clarence E.	Minneapolis
Lindblom, William H.	Minneapolis
Linner, Gunnar	Minneapolis
McGregor, Catherine G.	Minneapolis
Miller, Sidney	Rochester
Nadeau, Gerald H.	Bovey
Norum, Henry A.	St. Paul

Minnesota—Continued

Olds, George H.	Weseca
Pierce, Robert B.	Wadena
Sonnesyn, Nels N.	Le Sueur
Stark, Frederick M.	St. Paul
Steiner, Norman H.	Duluth
Stiepan, Frederick E.	Mandota
Stone, Harvey W.	Minneapolis
Stromgren, Delph T.	Minneapolis
Torrens, John K.	Minneapolis
Wiggin, Dayton C.	St. Cloud

Mississippi

Burgoyne, Bert R.	Laurel
Burress, Julian H.	Corinth
Carl, Louie T.	Jackson
Forman, Oliver D.	Natchez
Hightower, Charles C. Jr.	Hattiesburg
Horn, Edgar B.	Magee
James, Samuel W.	Ackerman

Missouri

Anderson, Eugene G.	Kansas City
Asbury, Clyde E.	Moberly
Blauw, Charles G.	Kansas City
Boedeker, Roy V.	St. Louis
Campbell, James E.	Brookfield
Castles, Charles C. Jr.	Caruthersville
Donaldson, Robert C.	Sheldon
Ernst, Edwin C. Jr.	Kirkwood
Fitzgerald, Thomas F.	Kansas City
Foerster, James M.	St. Louis
Freiberg, Milton	University City
Goldberg, Leonard B.	St. Louis
Gunn, Walter T.	Afton
Lieppman, Bernard S.	Kansas City
McAllister, John N.	Kansas City
Martin, William O.	Kansas City
Mazur, Herbert A.	University City
Nixon, William A.	Kansas City
Rand, Ellis	Excelsior Springs
Rubnitz, Leon H.	Kansas City
Scheele, Paul M.	University City
Schwarz, Henry H.	St. Louis
Simril, Wayne A.	Canton
Spoeneman, Marlin C.	Normandy
Williams, Charles S.	Malden
Yore, Richard W.	Brentwood

Montana

Blumenthal, Philip L.	Helena
Haywood, Guy S.	Forsyth

Nebraska

Bishop, Benjamin C.	Omaha
Crawford, William H.	Omaha
Johnson, Earle G.	Grand Island
Luellen, Thomas J.	York
Osberg, Franklin G.	Wausa
Racely, Clay A.	Pender
Sobota, Joseph E.	North Bend
Spellman, Frank W.	Omaha

New Hampshire

Chimiklis, Arthur G.	Hudson
Morin, Robert J.	Laconia

New Jersey

Arnault, Donald George	Bound Brook
Borak, Peter I.	South River
Bremer, Kenneth M.	East Orange
Brenna, Joseph D.	Trenton
Brunhofer, Andrew C. Jr.	Guttenberg
Bulger, James J.	Ridgewood
Burbidge, John R.	Princeton
Carnrick, Millard Jr.	Montclair
Cerchio, Michael P.	Jersey City
Chimacoff, Hyman	Irvington
Dreizin, David H.	Passaic
Foulk, Morris Jr.	Woodbury Heights
Glasser, Benjamin F.	Highland Park
Greenberg, William B.	North Bergen
Griswold, Merton L. Jr.	Plainfield
Handelman, Nathan I.	Newark
Harper, James G. M.	Plainfield

PHYSICIANS SEPARATED FROM SERVICE

New Jersey—Continued

Higgins, John G.	Jersey City
Janeway, Margaret	Trenton
Jennings, Robert E.	East Orange
Kelly, Leo J.	Perth Amboy
Longley, Wm. H., Jr.	Greystone Park
Lutz, Walter G.	Montclair
McLaughlin, William B.	West Orange
Niemtzow, Frank	Freehold
Nobile, James J.	Hoboken
O'Brien, Edwin J. Jr.	Plainfield
O'Donovan, Cornelius Jos.	Jersey City
Outwin, Richard Neal	Maplewood
Piver, James D.	Collingswood
Rommer, Thomas C.	Newark
Sanford, Robert S.	Maplewood
Schopbach, Robert R.	Collingswood
Schwartz, Leopold H.	Patterson
Sciarra, Daniel	Paterson
Siegel, Robert I.	Newark
Slocum, Richard C.	Fanwood
Smith, Edward C.	Lakewood
Stoddard, Gordon V.	East Orange
Weber, John J.	Newark
Whitesell, Edward B.	East Orange
Wright, Howard A.	Englewood

New Mexico

Parker, Frank W. Jr.	Gallup
Rowe, Frank A.	Albuquerque

New York

Aldridge, Charles W. Jr.	Snyder
Anolik, William	Brooklyn
Argentieri, Daniel D.	Queens Village
Bilka, Paul J.	New York
Bramley, William A.	Jordan
Brandes, Peter I.	Malone
Breecker, Arnold	Bronx
Brown, Clarence B.	Buffalo
Brumley, Stanford J.	Barker
Brunetta, Natale G.	New York
Buckley, Philip V.	Poughkeepsie
Bull, Homer T.	Geneseo
Bullen, Halsey G.	White Plains
Byrnes, Joseph A.	Utica
Carrier, Russell N.	Astoria, L. I.
Chassin, Jameson L.	Maspeth
Cliffton, Eugene E.	New York
Epstein, Benjamin	Brooklyn
Ettenson, Michael R.	Brooklyn
Farkas, Stephen P.	Buffalo
Farr, Richard S.	Syracuse
Forse, Max A.	Brooklyn
Frawley, Thomas F.	Rochester
Frelick, Robert W	Schenectady
Fremont, Rudolph E.	New York
Friedman, Eugene W	New York
Gaus, Louis H	Ticonderoga
Gimbel, Nicholas S.	New York
Glick, Irving V.	New York
Godman, Gabriel C.	Bronx
Gold, Morris	Fleischmanns
Goldberg, Harvey I.	New York
Gould, Richard G.	Yonkers
Greenberg, Milton	Bronx
Griffith, Robert L.	Utica
Gross, Victor	Brooklyn
Grycz, Irving W	Brooklyn
Hanlon, Lawrence W	Odessa
Herzig, Norman	Brooklyn
Hildebrand, William Jr.	Buffalo
Hoffman, I. Louis	Brooklyn
Holton, George W	Dolgeville
Honig, Charles	Forest Hills
Howland, Joe W	Rochester
Huebner, Robert D.	New York
Jacox, Ralph F	Rochester
Jaffe, Matthew H	New York
Jeannopoulos, Constantine L.	New York
Jetty, Earl L.	Rochester
Kieran, James M.	New York
Koenig, George A.	New York City
Kolson, Jack W	Brooklyn
Last, Jeremiah	Brooklyn

New York—Continued

Levine, Harry	Bronx
Levine, Lester V.	New York
Lillian, Marvin	Brooklyn
Linquest, John N.	Jamestown
Lione, John G.	Forest Hills, L. I.
Lippold, William E.	Brooklyn
Little, John W. Jr.	Petersburgh
Littler, James W.	Oran
Loizeaux, Leon S. Jr.	Jackson Heights
London, Lewis B.	New York
Looser, George K.	Nyack
McKenna, Carl J.	West Hempstead
McKenna, William P.	Chateaugay
Marganoff, Harry	Patchogue
Martz, Eugene W. Jr.	Thiells
Mathus, Francis T.	New York
Mineur, H. J. Jr.	W. Hempstead, L. I.
Morganstern, Leon	New York
Muendel, Harold J.	Queens Village
Murray, Francis X.	Bronx
Neel, James V.	Rochester
Neglia, Fortunato J.	Spring Valley
Neuburger, Frederick K.	Buffalo
Neufeld, Irvin	New York
Niesen, William C.	Buffalo
Nissel, Martin	Bronx
Olshansky, Abraham L.	Albany
Olson, Ernest S.	Bronx
Palmer, Hugh D.	New York
Pardell, Seymour S.	Brooklyn
Peabody, George E.	Ithaca
Pelzer, Rudolph H.	Flushing
Poore, John B.	Central Valley
Popovich, Theodore	New York
Prindle, Ronald E.	Norwich
Race, George A.	New York
Raider, Louis	New York
Redner, Bernard	Brooklyn
Rogati, Orpheus A.	Kings Park
Rogers, William J. III	Buffalo
Roody, Peter	Astoria, L. I.
Rosenfield, Isaac	Brooklyn
Rosenheck, Kenneth	White Plains
Rosenthal, Seymour E.	Brooklyn
Rubin, Leonard R.	New York
Schilling, Charles D.	Glen Cove
Schlechter, John F.	Brooklyn
Schlessel, Louis	Middletown
Schubert, Uriel	Mount Vernon
Schumann, Gerald M.	New York
Schwinger, Harold N.	Brooklyn
Sexton, William M.	Utica
Shepard, Herman L.	New York
Sherber, Daniel A.	Brooklyn
Short, Willard R.	Groton
Shultz, John L.	Skaneateles
Siffert, Robert S.	Brooklyn
Silberstein, Shepard	Brooklyn
Simon, Franklin	Elmhurst
Sirignano, George A.	Mount Vernon
Slater, Gregory D. S	Ithaca
Slocum, Jonathan	Beacon
Smith, Stanley C.	New York
Smith, William H.	Cold Spring
Smolev, Heyman	Buffalo
Snyder, Gerald W	Elmira
Soloway, David	Valley Stream
Spinner, Morton H.	New York
Spivack, Isaac D.	Brooklyn
Steele, Burns C.	New York
Steinhardt, Irving D.	New York
Stern, Abner	New York
Stern, Siegfried	N. Rochelle
Sternschein, Irving	Brooklyn
Stevens, John B.	Syracuse
Stevenson, A. N. Jr.	Port Washington
Stewart, William A.	Watervliet
Stiller, Ralph S.	New York
Stillman, James	Pleasantville
Stinard, Charles D.	Green City
Stocking, William B.	Binghamton
Stoesser, Paul N.	Eggertsville
Stojowski, Alfred J.	New York
Strateman, Charles M.	White Plains
Stromberg, Samuel	New York

New York—Continued

Takaro, Timothy	New York
Tchertkoff, Victor	New York
Temerson, Henri	New York
Theis, Alfred Julius	Ridgewood
Thompson, W. A. L.	Jackson Heights
Tissenbaum, Morris Joseph	Brooklyn
Towers, Paul A.	Brooklyn
Unher, Morris	Buffalo
Walder, Kurt	New York
Walters, Guy M.	Willard
Warren, Arthur F.	New Rochelle
Watson, John M. Jr.	Plattsburg
Weintraub, Arthur	New York
Wessel, Harold N.	New York
Wexelblatt, Robert	Brooklyn
Wilson, Arthur L.	Horseheads
Wilson, Frederick A.	Sag Harbor
Wilson, William T. Jr.	Rockville Centre
Winder, Miles S. Jr.	New York
Wise, Robert A.	Rochester
Wolf, Bernard S.	Far Rockaway
Ziprin, Joel L.	Bronx
Zuck, Frederick N.	Rochester

North Carolina

Boyce, William H. Jr.	Ansonville
Bumgarner, John R.	Wilkesboro
Elliott, Joseph A. Jr.	Charlotte
Fleming, Frank R.	Statesville
Furgurson, Ernest W.	Plymouth
Glenn, Charles A.	Gastonia
Holmes, Thomas H. III	Weldon
Jones, Martin E. Jr.	Granite Falls
McLean, James W.	Godwin
Owen, William B.	Canton
Schell, Robert E.	Swannanoa
Smith, Roy M.	Greensboro
Williams, Kenan B.	Sanford

North Dakota

Coleman, David R.	Bottineau

Ohio

Bossard, Samuel L.	Gallipolis
Brumley, Donald R.	Tiffin
Chamberlain, Webb P. Jr.	Bay Village
Crist, Jerry O.	Centerburg
Gerrish, Edwin W.	Canton
Goulder, Norman E.	Cleveland Heights
Greenfield, Maurice M.	Cleveland
Greetham, James S.	Cleveland
Haine, John W.	Lakewood
Henry, James L.	Grove City
Holliday, John C.	Cadiz
James, Frederick W.	Lancaster
Jobe, Charles H.	Cleveland
Kirch, Paul J.	Columbus
Langdon, Ira D.	Youngstown
Laybourne, Paul C. Jr.	Cuyahoga Falls
Lewin, Leonard	Cleveland
McAvoy, Harry D.	Toledo
McDonald, John C.	Cleveland
McGannon, Dallas J.	Lakewood
Marsico, Henry C.	Lorain
Moore, Daniel C.	Cincinnati
Royal, Warren M.	Dayton
Schauer, Joseph R.	Dayton
Scheetz, Raymond J.	Youngstown
Schneider, George R.	Columbus
Schnug, George E.	Cincinnati
Smith, Corwin A.	Dayton
Smith, Kenneth D.	Marion
Smith, Kenneth M.	Columbus
Smith, Simmons S.	Lakewood
Soldow, Fred	Cleveland
Stager, Walter R.	Dover
Stewart, William R.	Coshocton
Steyer, Clement E.	Lakewood
Stoodt, Paul Albert	Mansfield
Straub, Carter Richard	Columbus
Vangundy, Arthur B.	Lancaster
Yoder, Homer T.	Cleveland
Zeithaml, Carl E.	Cleveland

LOUISIANA

Equine Encephalomyelitis.—The Associated Press reports that state and federal health authorities are working in southwest Louisiana in an effort to halt an epidemic of equine encephalomyelitis which has also spread to human beings with fatal results to two children. The disease is said to have killed 2,800 horses and mules in that section.

MARYLAND

Academy Meetings.—The Silver Spring Academy of Medicine, Silver Spring, has scheduled its meetings for the remainder of the year. They are to be held in the Montgomery County Building at 8:15 p.m.: On November 3 Dr. Emil Novak, professor of gynecology, Johns Hopkins University, Baltimore, will speak on "Indications, Limits and Hazards of Endocrine Therapy in Gynecology"; on December 1 Dr. Richard B. Cattell, Boston, will address the academy on "Pancreatic Surgery."

Baltimore Creates Department of Medical Care.—The city service commission of Baltimore in July created a new program designed to administer medical care to the public assistance clients of the city welfare department. The new medical care section will round out a statewide service that has already been in operation in the counties of Maryland under the state department of health. Heretofore the responsibilities of the Baltimore City Health Department have been exclusively in preventive medicine, excepting only curative medical services for persons with communicable diseases. Dr. Wendell R. Ames, commissioner of health, Cattaraugus County, Olean, N. Y., began duties as director of the new department early in September. After receiving his medical degree from Long Island College of Medicine, New York, he was a staff member of the New York State Department of Health for five years and was on the faculty of Albany Medical College, Albany, N. Y.

MINNESOTA

Personal.—Dr. Albert J. Chesley, St. Paul, secretary and cutive officer of the Minnesota State Board of Health since 1, was given an honorary life membership by the American ocial Hygiene Association recently. He has been a vice president and served as a member of the board of directors and of various special and standing committees.——Dr. Paul F. Dwan, Minneapolis, has been elected president of the Minnesota Heart Association.

Communities Honor Their Physicians.—Thief River Falls celebrated "Dr. Mellby Day" June 30 in recognition of Dr. Oscar F. Mellby's forty years of service to the community. President James L. Morrill of the University of Minnesota delivered the address. Dr. Mellby received his medical degree from the Minneapolis College of Physicians and Surgeons, and six years later began practice in Thief River Falls. He has been active in civic affairs and has served nine years on the Minnesota State Board of Health.——A homecoming celebration was held July 13 in honor of Dr. Mathias L. Ransom, Hancock, who has practiced in that city for forty-four years. Highlight of the celebration was a parade comprised entirely of persons whose birth Dr. Ransom attended.——Park Rapids and residents of surrounding communities celebrated "Dr. Higgs Day" July 27, the thirty-fifth anniversary of the arrival of Dr. Walter W. Higgs in Park Rapids as a practicing physician. At a program in a school park tribute was paid to Dr. Higgs by the principal speaker, Dr. Charles H. Pierce of Wadena.

NEBRASKA

Personal.—Dr. Albert S. Black Jr., formerly of the Mayo Clinic, Rochester, Minn., was recently appointed an assistant in plastic surgery at Creighton University School of Medicine, Omaha. Dr. Black is a graduate of Rush Medical College, Chicago, 1940.

Dr. Eggers Appointed to State Health Department.—Dr. Harold E. Eggers, Omaha, has been named director of the cancer control division of the state health department. In cooperation with the Nebraska State Medical Association and the American Cancer Society, the division expects to establish a central cancer registry in the state. There are 1,700 deaths from cancer in Nebraska each year, according to the state health director, and it is believed that early diagnosis and treatment will reduce this number. Dr. Eggers, a graduate of Rush Medical College, Chicago, 1909, recently retired from the University of Nebraska College of Medicine, where he had been a professor of pathology and bacteriology since 1916.

Clinical Society Assembly.—The Omaha Mid-West Clinical Society will hold its *fifteenth annual assembly* at the Hotel Paxton, Omaha, October 27-31. Out of state speakers include:

Dr. William F. Rienhoff Jr., Baltimore, Diagnosis and Surgical Treatment of Carcinoma of the Lung.
Dr. Nelson W. Barker, Rochester, Minn., Anticoagulant Therapy.
Dr. Theodore E. Sanders, St. Louis, Management of Some of the Common External Ocular Diseases.
Dr. Charles A. Weymuller, New York, Indications for Urologic Survey in Pediatrics.
Dr. Franklin G. Ebaugh, Denver, The Despecialization of Psychiatry.
Dr. William T. Green, Boston, Orthopedic Problems of Infancy and Childhood.
Dr. F. Bayard Carter, Durham, S. C., Origin and Management of Postpartum Hemorrhage.
Dr. Roy B. Henline, New York, Red Blood Cells in the Urine.
Dr. Warren B. Cole, Chicago, Tumors of the Pancreas and Pancreatitis.
Dr. Paul R. Cannon, Chicago, Nutritional Advances in Medicine and Surgery.
Dr. Walter L. Palmer, Chicago, Treatment of Intractable Peptic Ulcer.
Dr. Edward L. Bortz, Philadelphia, President of the American Medical Association, Statesmanship in Medicine.
Dr. John M. Adams, Minneapolis, Erythroblastosis Fetalis.

Included in the program are a series of local symposiums on convulsive disorders, immunization, low back pain, new therapeutic agents, obstetric problems and thyroid disease.

NEW JERSEY

Clinical Conference.—The *fifth clinical conference* of the Medical Society of New Jersey, under the auspices of the Passiac County Medical Society, will be held October 29, with morning sessions at St. Mary's and Passaic General hospitals in Passaic, Valley View Sanatorium, Nathan and Miriam Barnert Memorial Hospital, St. Joseph's and Paterson General hospitals in Paterson. The afternoon sessions will be held at the Alexander Hamilton Hotel, Paterson. Subjects under discussion will be: "Treatment and Prevention of Thrombophlebitis and Phlebothrombosis," "Rh Factor in Clinical Application," "Present Day Concept of Treatment of Syphilis," "The Clinical Aspects of Hepatitis," "Management of Arteriosclerotic Heart Disease" and recent advances in sulfonamide treatment, penicillin, streptomycin, cancer research and surgery of the gastrointestinal tract. At the evening session Dr. George Baehr, president of the New York Academy of Medicine, New York, will deliver the Elias J. Marsh oration on "The Continuing Education of Physicians; A Forecast of Imminent Changes."

NEW YORK

Graduate Lectures at Geneva.—The Medical Society of the State of New York and the New York State Department of Health have arranged two lectures for the Geneva Academy of Medicine at the Seneca Hotel at 8:30 p.m. On October 16 Dr. Earle B. Mahoney, Rochester, will speak on "Treatment of Burns." On December 18 Dr. William J. Orr, professor of pediatrics, University of Buffalo School of Medicine, will address the academy on "Modern Methods in Prevention and Treatment of Infectious Diseases."

State Loans X-Ray Equipment to Hospitals.—The New York State Department of Health has begun a new phase of its program in tuberculosis case finding by promoting routine chest roentgen examinations of patients admitted to hospitals, through the loan of complete x-ray equipment for making small films. Because of the limited number of state-owned x-ray units, only hospitals having 7,000 or more admissions a year can be accommodated. As more units become available the program will be extended to smaller hospitals. The objective is to make a roentgen examination of each patient 15 years of age and over who is admitted to a general hospital. To stimulate participation and help defray the cost, hospitals utilizing loaned equipment will be paid 50 cents for each report of an examination submitted. Any hospital desiring to use its own equipment will be reimbursed on the same basis if it conforms to the department's tuberculosis program. Interpretation of films is the responsibility of the hospital.

New York City

Study of Cancer in Fish.—The New York Aquarium will expand its study of cancer in fish under a $4,595 grant from the National Cancer Institute. The aquarium has been studying cancer through its cross breeding of fish for the last ten years.

Harvey Lecture.—Abraham White, Ph.D., associate professor of physiological chemistry, Yale University School of Medicine, New Haven, Conn., will deliver the first Harvey Lecture of the current series at the New York Academy of Medicine, October 23, on "Influence of Endocrine Secretions on the Structure and Function of Lymphoid Tissue."

Child Health and Welfare Committee.—At the organization meeting of the Child Health and Welfare Committee, County of Kings, July 22, it was decided to institute a study on the effect of illness of the mother during pregnancy on the new born, particularly the role which contagious diseases play in the causation of congenital anomalies. The department of health has offered its facilities. The plan is to appoint representatives of the committee in each hospital to investigate all cases of congenital anomalies. Dr. Henry Rascoff served as chairman.

Hospitals Aid Crippled Children.—Voluntary hospitals in New York City are providing more and more facilities for the correction of congenital crippling conditions in children, according to the United Hospital Fund The fund strongly urges parents to become acquainted with the facilities provided by its eighty-nine member institutions. These hospitals provide nearly six million days of bed care for more than one-half the total hospital patients in New York City, and their clinics provided more than three million visits to New Yorkers last year, the fund reports. Medical care and hospital services established by the United Hospital Fund's member voluntary hospitals are available to all who need them, regardless of race, creed or ability to pay.

Six Lectures on Psychiatry.—A series of six lectures on modern psychiatry will be given in the Town Hall Auditorium beginning October 20 at 5:30 p m and on the five succeeding Mondays. The series, under the auspices of the Town Hall short course division, will open with Dr. Carl A. L. Binger of Cornell University Medical College, speaking on "What Is Mental Health?" He will be followed by Dr. Edward A. Strecker of the University of Pennsylvania School of Medicine, Philadelphia, "The Psychiatric Implications of Immaturity"; Dr. Franz G. Alexander, Chicago Institute of Psychoanalysis, "What Is a Neurosis?"; Dr. Roy R. Grinker of Michael Reese Hospital, Chicago, "The Psychology of Middle-Aging"; Dr. Thomas A. C. Rennie, Cornell University Medical College, "What Is Psychotherapy?," and Dr. Frank Fremont-Smith, of the Josiah Macy Jr. Foundation, "Mental Health and World Citizenship."

Society for Speech and Voice Therapy.—The first meeting of the New York Society for Speech and Voice Therapy was held at the Academy of Medicine, October 8. Organized to promulgate the most modern knowledge and to stimulate further studies concerning speech and voice disorders, causes and treatment, the society will sponsor monthly lectures on subjects of scientific and practical interest. General membership is open to persons who are interested in the practice, study or teaching of speech and voice therapy and who, in addition, have any of the following qualifications: (1) a degree from any recognized college or university in speech or an allied subject; (2) a degree in medicine from a recognized institution, or (3) a position teaching or pursuing the clinical studies of speech and/or voice defects in a recognized institution. Applications may be addressed to Dr. Deso A. Weiss, 10 West Sixty-Fifth Street, New York 28.

New City Regulations Regarding Barbiturates.—Beginning November 1, to protect the public, prescribing and dispensing barbiturates in New York City will be governed by the following requirements of the Sanitary Code: 1. Barbiturates may not be dispensed except on written prescription; 2. Prescriptions for barbiturates may not be refilled unless there is specified on the prescription the number of times they may be refilled and the minimum interval that may elapse between refillings. 3. Under no circumstances may a prescription for barbiturates be refilled later than three months after the date of issuance. 4. Barbiturates may not be dispensed on a telephone order. 5. A copy of a barbiturate prescription cannot be filled; only an original is acceptable. 6. Barbiturates, including manufacturers' samples dispensed directly to a patient by a physician, must be given in a container on which the following information appears: (*a*) doctor's name and address; (*b*) patient's name and address; (*c*) directions for use, and (*d*) date of dispensing. 7. Prescriptions written for compounds containing barbiturates are exempt from the provisions of the new law if the compound contains, in addition to a barbiturate, such quantity of another drug or drugs as to make the action of the compound not primarily hypnotic or somnifacient and provided no such compound contains more than ¼ grain (15 mg.) of a barbiturate in each dose. Preparations used as sprays, gargles or for external application are also exempt if they contain, in addition to the barbiturate, ingredients which make the preparation unfit for internal use. The growing problem of the abuse of barbiturates has made the new regulations necessary. Seventy-seven accidental deaths in the city due to these drugs occurred in 1946 compared with 11 deaths in 1930. In addition the number of persons who have committed suicide by means of barbiturates has increased.

NORTH CAROLINA

Symposium on Diseases of Gastrointestinal Tract.—Duke University School of Medicine and Duke Hospital, Durham, will present the tenth annual medical symposium October 17-18 in Page Auditorium on the West Campus. Physician speakers on the program are:

Frank C. Mann, Rochester, Minn., Physiologic Factors in Relationship to Peptic Ulceration.
Walter L. Palmer, Chicago, Medical Management of Peptic Ulcer.
Leon J. Saul, Philadelphia, Psychosomatic Aspects of Peptic Ulcer.
Owen H. Wangensteen, Minneapolis, Studies in the Etiology and Surgical Management of Ulcer.
J. Arnold Bargen, Rochester, Minn., Differentiation of Various Forms of Ulcerative Colitis and Their Medical Management.
Henry W. Cave, New York, Surgical Treatment of Ulcerative Colitis.
Richard Schatzki, Cambridge, Mass., Roentgenologic Considerations in the Differentiation of Various Benign and Malignant Lesions of the Gastrointestinal Tract.
Stewart G. Wolf, New York, The Functions of the Stomach as Observed in Fistulous Human Subjects, with Special Reference to the Action of Drugs and the Effects of Vagotomy.
Richard H. Sweet, Boston, Treatment of Carcinoma and Inflammatory Stricture of the Esophagus by Resection and Primary Anastomosis.
Mandred W. Comfort, Rochester, Minn., Syndrome of Progressive Destruction of the Pancreas: Its Diagnosis and Treatment.
Robert Elman, St. Louis, Medical and Surgical Aspects of Inflammation of the Pancreas.
Alexander Brunschwig, New York, The Surgery of Pancreatic Tumors.

OHIO

Personal. — *Dr. Ralph B. Taylor, Columbus,* has been appointed a member of the Ohio State Medical Board for a period of seven years.——Dr. Hans G. Schlumberger has been appointed to the staff of the department of pathology, Western Reserve Medical School, Cleveland. Dr. Schlumberger graduated at the University of Pennsylvania School of Medicine, Philadelphia, in 1937 and taught there from 1939 to 1942.——Dr. Walter M. Simpson, Dayton, resigned as director of medical research for the Charles F. Kettering Foundation in Miami Valley Hospital, effective August 15. Dr. Simpson has been associated with the Kettering Foundation since 1927.

Open Cancer Clinic in Mansfield.—A cancer diagnostic clinic sponsored jointly by the Richland County Medical Society, the American Cancer Society and the Mansfield City-County Department of Health was opened September 9 in Mansfield. A grant in aid of approximately $12,000 has been recommended by the state health department to supplement local funds. The clinic is operated by the Cancer Committee of the medical society, headed by Dr. Henry T. Stiles, chairman. Dr. Willis E. Wygant is clinic director. The nursing services and public health aspects of the project are under Dr. Fred O. Tonney, city-county health officer. A panel of eighteen physicians has been selected for clinic duty.

PENNSYLVANIA

Society News.—At the annual dinner meeting of the Pennsylvania Psychiatric Society in Pittsburgh, September 18, Dr. Nolan D. C. Lewis, director of the New York State Psychiatric Institute, New York, spoke on "Social Aims and Organization of a Psychiatric Research and Teaching Center." Dr. LeRoy M. A. Maeder, Philadelphia, became president; Dr. Thomas A. Rutherford, Waymart, president-elect, and Dr. Philip Q. Roche, Philadelphia, secretary-treasurer.

Aid for Persons with Arrested Cancer.—The Pennsylvania Bureau of Rehabilitation in cooperation with the Pennsylvania division of the American Cancer Society has established a policy whereby persons with arrested cancer may apply for its services. Clients are eligible, with the exception of four year college training programs, if two qualified medical consultants decide that the disease is presumably arrested or eradicated and is an employment handicap. The program for persons requesting college education will be delayed for about three years from the date of original diagnosis and instituted only after the case has been reviewed again by two qualified consultants who are of the opinion that the disease is presumably arrested or eradicated and that an employment handicap exists.

Philadelphia

Schireson's License Revoked.—The State Board of Medical Education and Licensure on August 29 revoked the license of Dr. Henry J. Schireson to practice medicine in Pennsylvania on grounds that he had obtained his license June 29, 1910, by fraud. The case has been before the board, the Dauphin county court and the state supreme court for over three years (The Journal, Nov. 20, 1943, p. 790).

Assistant Director for Phipps Institute.—Dr. Russell E. Teague, surgeon reserve, U. S. Public Health Service, recently assigned to the Henry Phipps Institute at the University of Pennsylvania, Philadelphia, by the tuberculosis control division of the Public Health Service, has been appointed assistant director of the institute and assistant professor of public health in the university. Dr. Teague will divide his time between his new duties at the institute and his continuing responsibilities as consultant on tuberculosis for the New England States, New York, New Jersey, Delaware and Pennsylvania. He is a graduate of the University of Louisville School of Medicine, Louisville, 1929.

TEXAS

Equine Encephalitis.—An outbreak of eastern equine encephalitis among horses on Galveston Island has been investigated by Morris Pollard, director, Virus Laboratory, University of Texas Medical Branch, Galveston. Dr. Pollard identified the character of the epidemic in eastern Texas before it struck the lower Gulf Coast. The possibility of transmission to man is being carefully watched.

Houston Pediatrics Conference.—A pediatrics conference is scheduled to be held in Houston, October 13-18, under the sponsorship of Baylor University College of Medicine, Houston, University of Texas Child Health Program, Houston Guidance Center, the State Board of Health and the Texas Pediatric Society. Enrolment of pediatricians attending the conference at the expense of the state health department is limited to eighty, but others may attend on payment of a small tuition fee. The guest speakers are: Drs. Paul L. Boisvert, Yale University; Jules V. Coleman, University of Colorado School of Medicine, Denver; Harold W. Dargeon, Columbia University College of Physicians and Surgeons, New York; Milton E. Kirkpatrick, Tulane University of Louisiana School of Medicine, New Orleans; Robert A. Lyon, University of Cincinnati College of Medicine; Russell J. Blattner, Baylor University College of Medicine, Houston; J. Warner Duckett, Southwestern University Medical College, Dallas; Arild E. Hansen, University of Texas Medical Branch, Galveston; and Sumpter S. Arnim and Russell K. Smith, University of Texas School of Dentistry, Galveston; Paul C. Bucy and Douglas N Buchanan, University of Chicago, the School of Medicine, and Julian D. oyd, State University of Iowa College of Medicine, Iowa City.

WEST VIRGINIA

Society News.—At a meeting of the board of directors of the West Virginia Tuberculosis and Health Association in Charleston, September 18, Dr. William P. Bittinger, Summerlee, was reelected president; Dr. William L. Cooke, Charleston, vice president; Dr. James L. Patterson, Logan, secretary, and Robert C. Hawkins, Charleston, treasurer.

Urologists Form State Society.—At a meeting of urologists in Huntington, September 11, the West Virginia Urological Association was organized with the following officers: Dr. Richard D. Gill, Wheeling, president; Dr. Grattan G. Irwin, Charleston, vice president, and Dr. Charles A. Hoffman, Huntington, secretary-treasurer. The new association will seek formal affiliation with the West Virginia State Medical Association.

First City-County Health Merger.—The Kanawha-Charleston Health Department is the first health unit to be effected under the provisions of a bill passed by the legislature in 1947, which authorizes the consolidation of city and county health units. Dr. Leon A. Dickerson of Madison has accepted appointment as director of the new department for a term of four years beginning October 1. Dr. Dickerson, former county health officer for Boone County, is a graduate of the Medical College of Virginia, Richmond, 1935. He has also been county health officer for Lafayette County and venereal control health officer for the state department of health.

Expand Chest Diagnostic Facilities.—The present chest diagnostic facilities in the state will be expanded in a program sponsored by the state health department and the West Virginia Tuberculosis and Health Association, for which $10,000 was appropriated by the legislature. Diagnostic clinics served by clinicians are already in operation in Boone, Fayette, Logan, Marion, Marshall, Monongalia, Ohio and Harrison counties. Three counties, Kanawha, Hancock and Raleigh, have monthly x-ray clinics but do not have the services of a clinician. In Lewis, Wood, McDowell, Mingo, Mercer, Greenbrier and Berkeley counties organized groups are undertaking to establish regular monthly clinics with all facilities. Service in the other thirty-seven counties will be provided by a traveling unit staffed with a tuberculosis specialist. X-ray service will also be available as part of the state-sponsored program.

WISCONSIN

Dr. Ask-Upmark to Lecture at Madison.—Dr. Erik Ask-Upmark, professor of general medicine and neurology, the University of Upsala, Sweden, will speak at a meeting of the University of Wisconsin Medical Society, Madison, at 8 p. m. October 15 on "The Spleen and Some of Its Disorders." The meeting will be open to the public. Dr. Ask-Upmark was a fellow associated with the Rockefeller Foundation in 1932-1933, and he studied in Boston in the clinics of Harvey Cushing and Stanley Cobb. His appearance in this country is a result of the presentation of a series of lectures at the University of California Medical School, Berkeley-San Francisco, and his attendance at the recent Cancer Congress in St. Louis.

GENERAL

Brochure on Equipment for Cerebral Palsy Cases.—Zeta Tau Alpha, national women's sorority, will cooperate with the National Association for Crippled Children and Adults, cerebral palsy division, in publishing an equipment brochure for which funds have been appropriated. The guide will describe the therapeutic equipment needed and used in cerebral palsy cases and will include information about its construction and where it may be obtained. The sorority's one hundred and thirty-five alumnae groups will cooperate.

Dr. Connor Appointed Medical Director.—Dr. Charles A. R. Connor, New York, has been appointed medical director of the American Heart Association, succeeding Dr. David D. Rutstein, New York, who resigned to become professor of preventive medicine, Harvard Medical School, Boston. Dr. Connor graduated in 1931 from New York University College of Medicine, where since 1935 he has been an instructor in medicine. He was named associate physician in cardiovascular disease and assistant chief of the cardiovascular clinic, Lenox Hill Hospital, in 1946. He served in the U. S. Army as flight surgeon and consulting cardiologist in the recent war.

Dr. Kendall Emerson Given Trudeau Medal.—Dr. Kendall Emerson, New York, managing director of the National Tuberculosis Association since 1928, has been awarded the 1947 Trudeau medal for meritorious service in the campaign against tuberculosis in this country and abroad. The medal was presented at the annual meeting of the National Tuberculosis Association in San Francisco, June 17. Dr. Emerson is a graduate of Harvard Medical School, Boston, 1901. He served as executive secretary of the American Public Health Association from 1931 to 1935, is a consultant to the U. S. Public Health Service, councilor, Medical Council of the Veterans Administration, member of the executive committee of the International Union Against Tuberculosis and was a member of the U. S. Commission to the Pan American Sanitary Union meeting in Buenos Aires in 1934.

Meeting of National Society of Crippled Children and Adults.—The annual convention of the National Society of Crippled Children and Adults, Inc., will be held at the La Salle Hotel, Chicago, November 2-5, under the presidency of Col. Elbridge W. Palmer, Kingsport, Tenn. Physicians speaking on the program built around the theme, "The Handicapped—A Great National Resource," include:

Henry G. Poncher, Chicago, The Convalescent Child and His Needs.
Howard A. Rusk, New York, The Forgotten Casualty.
George G. Deaver, New York, Physical Demands of Daily Life.
Raymond T. Carhart, Ph.D., Chicago, Communication, Our Highway to Living.
Arnold L. Gesell, New Haven, Conn., Growth and Development of the Cerebral Palsied Child.

Physician members of the panel, "Needs for Rehabilitation Services," are Dr. Carl M. Peterson, secretary, Council of Industrial Health, American Medical Association, Chicago, chairman, and Dr. Harold A. Vonachen, Peoria, Ill.

International Meeting on Venereal Diseases.—The first postwar general assembly of the International Union Against the Venereal Diseases will be held at the Institut Fournier, 25 Boulevard St. Jacques, Paris, October 20-25, under the presidency of Dr. William F. Snow, New York. The United States delegation will include Dr. James A. Doull, Washington, D. C., the U. S. Public Health Service, chief of International Health Relations; Dr. John R. Heller Jr., chief, U. S. Public Health Service venereal diseases division, Bethesda, Md., and Miss Jean B. Pinney, director of the union's regional office for the Americas. International organizations with which especial cooperation is maintained aside from the World Health Organization are UNESCO's section on Natural Science, the International Labor Organization, International Council on Women, International Alliance of Women and the League of Red Cross Societies. It is expected that these agencies will be represented at the assembly, as well as many of the sixty-four national member agencies located in forty-five countries.

Prevalence of Poliomyelitis.—Reports of cases of poliomyelitis for the periods indicated have been received from the division of public health methods, U. S. Public Health Service.

Division and State	Week Ended			Total to		Total *	
	Sept. 27, 1947	Sept. 28, 1946	Median, 1942-1946	Sept. 27, 1947	Sept. 28, 1946	March 16-Sept. 27, 1947	March 17-Sept. 28, 1946
New England:							
Maine	5	2	2	35	20	32	20
New Hampshire	1	10	2	20†	120	16†	119
Vermont	3	7	2	25	29	17	25
Massachusetts	30	28	28	246	174	239	170
Rhode Island	8	13	3	128	56	127	56
Connecticut	2	5	10	104	59	101	51
Middle Atlantic:							
New York	117	117	108	797	939	761	906
New Jersey	34	10	10	208	178	202	172
Pennsylvania	31	19	19	317	195	303	183
East North Central:							
Ohio	176	52	36	922	524	912	509
Indiana	17	27	8	179	259	163	254
Illinois	50	131	71	656	1,779	634	1,771
Michigan	79	60	19	456	658	432	650
Wisconsin	25	95	19	150	870	126	857
West North Central:							
Minnesota	11	96	26	186	2,430	173	2,429
Iowa	13	31	16	115	412	107	403
Missouri	4	90	19	91	918	81	911
North Dakota	1	25	1	66	391	61	391
South Dakota	0	6	1	10	320	8	320
Nebraska	8	34	8	161	408	154	407
Kansas	7	66	9	76	709	58	705
South Atlantic:							
Delaware	2	6	2	124	21	124	21
Maryland	8	5	5	66	71	60	69
District of Columbia	0	2	2	116	88	106	82
Virginia	23	3	8	116	88	106	82
West Virginia	7	1	4	85	57	81	54
North Carolina	18	10	8	142	93	127	86
South Carolina	0	1	2	19	19	18	16
Georgia	5	3	2	60	131	53	123
Florida	3	7	4	74	502	49	453
East South Central:							
Kentucky	11	4	4	70	95	69	92
Tennessee	12	5	6	95	137	83	128
Alabama	2	4	4	42	350	29	347
Mississippi	1	11	4	39	255	22	238
West South Central:							
Arkansas	4	26	3	65	314	54	302
Louisiana	1	5	2	44	307	26	288
Oklahoma	0	12	6	41	304	30	298
Texas	9	28	26	153	801	128	773
Mountain:							
Montana	3	9	5	22	105	20	89
Idaho	26	2	0	128	29	118	29
Wyoming	0	7	2	15	106	12	105
Colorado	2	41	4	47	806	42	805
New Mexico	2	8	1	28	144	25	143
Arizona	0	2	2	28	93	25	90
Utah	1	10	10	9	109	4	103
Nevada	0	0	0	1	3	1	3
Pacific:							
Washington	5	27	13	102	331	94	298
Oregon	5	4	5	61	121	56	117
California	28	129	52	661	1,643	512	1,556
Total	800	1,296	...	7,297†	18,502†	6,685†	18,035†
Median, 1942-1946	...	....	774	9,657		9,260	

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* Last two columns show reported incidence since approximate seasonal low week (week ended between March 15 and 21).

† Figures changed by corrected reports.

Meeting of Association of American Medical Colleges.—The fifty-eighth annual meeting of the Association of American Medical Colleges will be held at Sun Valley, Idaho, October 27-29, under the presidency of Dr. William S. McEllroy, Pittsburgh. Arrangements have been made with the Union Pacific Railroad for special cars to leave Chicago for Sun Valley October 24 at 2 p.m., and a special train will leave Sun Valley October 29 at 8:30 p.m., to arrive in Chicago October 30 at 2:30 p.m. The program for the opening day follows:

Dr. Donald B. Tresidder, president, Stanford University, Stanford University-San Francisco, Aims and Objectives of Medical Education.
Dr. Alan M. Chesney, dean, Johns Hopkins University School of Medicine, Baltimore, Some Impacts of the Specialty Board Movement on Medical Education.
Dr. Byrl R. Kirklin, Rochester, Minn., Advisory Board for Medical Specialties, Basic Science Requirements for Specialty Certification.
Dr. Currier McEwen, dean, New York University College of Medicine, New York, Graduate and Postgraduate Training for Specialization.
Dr. Walter H. Moursund Jr., M. C., U. S. Army, A New Approach to Basic Science Instruction at the Postgraduate Level.
Dr. William S. McEllroy, dean, University of Pittsburgh School of Medicine, address of the president: The Association of American Medical Colleges.

TUESDAY

Dr. Thomas Parran, Surgeon General, U. S. Public Health Service, Washington, D. C., Shortage of Medical Personnel.
Francis J. Mullin, Ph.D., dean of students, University of Chicago Medical School, Selection of Medical Students.
H. Grant Taylor, assistant dean, Duke University School of Medicine, Durham, N. C., The Personal Interview of Applicants.
Dewey B. Stuit, Iowa City, director of study, Committee on Personnel Practices, The Discovery of Medical Talent.
Harold A. Shoemaker, assistant dean, University of Oklahoma School of Medicine, Oklahoma City, and John H. Rohrer, Relationship Between Success in the Study of Medicine and Certain Psychologic and Personal Data.

WEDNESDAY

Dr. Stuart W. Lippincott, University of Washington School of Medicine, Seattle, Teaching of Clinical Laboratory Methods.
Joseph H. Gast, Sc.D., Baylor University College of Medicine, Houston, Texas, Teaching of Medical Biochemistry.
Dr. Edgar J. Poth, University of Texas School of Medicine, Galveston, Texas, Correlation and Continuation in Medical Education.
Dr. Richard H. Young and George A. Pierson, Ed.D., University of Utah School of Medicine, Salt Lake City, The Professional Aptitude Test—1947: A Preliminary Evaluation.
Dr. Ernest W. Brown, Chicago. Committee on Scientific Development of the Council on Industrial Health, American Medical Association, The Place of Occupational Medicine in the Undergraduate Curriculum.

FOREIGN

Salvation Army Leprosariums in India.—The public relations department of the Salvation Army, 120 West Fourteenth Street, New York, announces that the Salvation Army has been working among leprous persons in India for the past seventeen years and has three leprosariums directed by Salvation Army medical personnel located at Bupatala in Madras province, Puthankruza in the state of Travancore and Karati in Cochin state. Nine hundred patients are being treated in the three hospitals. Major Hilda Plummer, who spent the last fourteen years in India organizing leprosariums, returned to the United States in March and has studied at the U. S. Marine Hospital for the treatment of leprosy at Carville, La. Major Plummer states that the new Indian provincial governments are turning to foreign medical and mission groups who have been doing medical work in India to help them establish adequate medical services for their people. The one condition they insist on is that every effort be made to instruct and train native Indians to take over the work. Besides operating leprosariums, the Salvation Army medical staffs in India maintain clinical service for persons in the early stages of leprosy and also treat patients in their homes. The Salvation Army hopes to extend its work with the leprous to other states and provinces. The greatest need at present is said to be for medical and mission personnel and specialized equipment. The Salvation Army medical work in India is financed largely through self denial weeks among its own members throughout the world, whereby each person foregoes some necessity and donates the money for this work.

Marriages

NORMAN FRANCIS WYATT, Petersburg, Va., to Miss Frances Jay Cushman of Westwood, Mass., in Dedham, Mass., September 6.

ROBERT SCHUESSLER GRAVES, Gadsden Ala., to Miss Faye Lucile Hunsucker of Charlotte, N. C., in Panama City, Fla., July 30.

HOLMES BUCK SPRINGS Jr., Myrtle Beach, S. C., to Miss Shirley Jean Wurst of Palmyra, N. J., at Dublin, Ga., August 29.

NESTOR WILLIAM WAWRO, Ansonia, Conn., to Miss Judith Aileen Winslow Stoughton of West Hartford August 23.

THOMAS BAYTON SUITER, Rocky Mount, N. C., to Miss Antoinette Culler Smith of Wellesley Hills, Mass., at Orangeburg, S. C., August 16.

FRANKLIN W. ROUSH, St. Petersburg, Fla., to Mrs. Julia M. Rhoads in Hillsboro, Texas, September 4.

EDWIN LEROY SCOTT, Augusta, Ga., to Miss Charlotte Marion Conaway in Columbia, S. C., September 15.

ELMER JACOBS HARRIS, Scottsboro, Ala., to Miss Ellen Virginia Moncrief of Prattville, recently.

EUGENE WESLEY GORDON, Oneonta, Ala., to Miss Lois Alene Savage of Montgomery, June 28.

WALTER A. MCLEOD, Jr., St. Petersburg, Fla., to Miss Ada B. Hurley of Detroit, recently.

JOHN E. DEES to Miss Elizabeth Osgood Gautier, both of Miami, Fla., June 21.

WILLIAM F. CONNELL to Miss Kathryn Rose Harrigan, both of Pittston, Pa., July 26.

Deaths

William Charles White, Washington, D. C.; born in Woodstock, Ontario, Canada, September 3, 1874; M.B., University of Toronto Faculty of Medicine, Toronto, Canada, 1898, and M.D., in 1901; did postgraduate work at universities in Leipzig and Heidelberg in Germany; professor of pathology at the Central College of Physicians and Surgeons, later known as the Indiana Medical College, School of Medicine of Purdue University, Indianapolis, from 1900 to 1905, when he became professor of neuro-anatomy and clinical psychiatry, Indiana University School of Medicine, Indianapolis, serving until 1907; associate professor of medicine at the University of Pittsburgh School of Medicine from 1908 to 1916; medical director of the Tuberculosis League Hospital of Pittsburgh and director of the R. B. Mellon Research Laboratory from 1907 to 1923, when he became a consultant to the U. S. Public Health Service; member of the Association of American Physicians, American Association for the Advancement of Science, American Clinical and Climatological Association, American Sanatorium Association, American Association of the History of Medicine, New York Academy of Medicine and others; honorary member of the Tuberculosis Society of Scotland; president of the National Tuberculosis Association from 1933 to 1936 and for many years chairman of the association's medical research committee; past president of the District of Columbia Tuberculosis Association; affiliated with the National Research Council in various capacities; during World War I director of the division for relief and prevention of tuberculosis of the American Red Cross in France and Italy; at one time chairman of consultants on hospitalization under the Secretary of the U. S. Treasury; in 1932 appointed a delegate and chairman of the conference of the International Union Against Tuberculosis in Amsterdam; received the Serbian Order of Saint Sava and the Commendatore of the Order of the Crown of Italy; in 1940 awarded the Trudeau Medal of the National Tuberculosis Association; chairman of the advisory committee to the health department of Washington; at the time of his death director of the District of Columbia Cancer Society, Washington Home for Foundlings and the Warwick Memorial Clinic; died in Westmoreland Hills, Md., August 10, aged 72, of heart disease.

Le Grand Guerry, Columbia, S. C.; born in Florence, Feb. 3, 1873; University of Georgia Medical Department, Augusta, 1896; honorary member and past president of the South Carolina Medical Association; member of the American Medical Association; member and formerly vice-president of the American Surgical Association; fellow of the American College of Surgeons; past president of the Southern Surgical Association, Columbia Medical Society and the Tri-State Medical Association; member of the founders' group of the American Board of Surgery; at one time on the faculty of his alma mater; received the degree of doctor of civil law from the University of the South, Sewanee, Tenn., in 1924, doctor of laws from University of South Carolina in 1928 and doctor of science from the University of Georgia in 1931; for many years surgeon at Columbia Hospital, where in 1947 a plaque was unveiled and a wing of the hospital named in his honor and where he died August 14, aged 74, of heart disease.

Edwin Baker Goodall, Boston; born in Jefferson, N. H., July 17, 1882; Maryland Medical College, Baltimore, 1905; University of Maryland School of Medicine, Baltimore, 1909; member of the American Medical Association, American Academy of Ophthalmology and Otolaryngology and the New England Ophthalmological Society; specialist certified by the American Board of Ophthalmology; served during World War I; instructor in ophthalmology at the Harvard Medical School; affiliated with the Massachusetts Eye and Ear Infirmary and Children's Hospital; consulting ophthalmologist to Cambridge (Mass.) Hospital; died August 6, aged 65.

Jay Frank Auner ⊕ Des Moines; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1897; specialist certified by the American Board of Dermatology and Syphilology; on the staffs of Iowa Lutheran Hospital and Iowa Methodist Hospital, where he died August 17, aged 74.

Fannie Elizabeth Barrett, Kalamazoo, Mich.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1899; for many years school medical inspector of Kalamazoo and on the staff of Kalamazoo State Hospital; affiliated with the Borgess and Bronson hospitals; died August 10, aged 77.

Orrin Curtis Blair ⊕ Lynn, Mass.; Harvard Medical School, Boston, 1903; fellow of the American College of Surgeons; on the staff of Lynn Hospital, where he died August 3, aged 67, of cerebral hemorrhage and diabetes mellitus.

Arpad Braun, Cleveland; Northwestern University Medical School, Chicago, 1925; member of the American Medical Association; died July 15, aged 51, of heart disease.

John Graham Brooks, New Rochelle, N. Y.; Fordham University School of Medicine, New York, 1921; affiliated with New Rochelle Hospital; died August 1, aged 50.

William Patrick Burns, Washington, D. C.; Chicago Medical School, 1915; died in Atlantic City, N. J., August 28, aged 54.

Haldor Carlsen, Chicago; Bennett Medical College, Chicago, 1913; member of the American Medical Association; on the staffs of the Edgewater, Swedish Covenant, Belmont and Norwegian American hospitals; died in Sparta, Wis., August 1, aged 62.

Albion C. Christian, Irvington, N. J.; Western Reserve University Medical Department, Cleveland, 1887; for many years member and at various times president of the board of education; served on the staff of Irvington General Hospital, where he died July 29, aged 81, of congestive heart disease and arteriosclerosis.

James Patrick Collins, Glendale, Calif.; Rush Medical College, Chicago, 1902; at one time a police surgeon in Chicago; died August 1, aged 69, of lobar pneumonia.

W. Pingree Curtis, Chicago; Dearborn Medical College, Chicago, 1905; member of the American Medical Association; affiliated with Woodlawn Hospital; died August 22, aged 67, of coronary thrombosis.

Walter Elmer D'Arcy, Trenton, N. J.; born in Trenton, N. J., 1886; Hahnemann Medical College and Hospital of Philadelphia, 1909; member of the American Medical Association; fellow of the American College of Surgeons; past president of the Mercer County Medical Society; president of the board of education; consulting surgeon, New Jersey State Village for Epileptics, Skillman; medical director and a member of the board of directors of McKinley Hospital, where he died July 23, aged 61, of acute lymphatic leukemia.

Anthony Foster De Graffenried, Bayside, N. Y.; University of Louisville (Ky.) Medical Department, 1911; for many years on the staff of Flushing (N. Y.) Hospital; died August 9, aged 62, of heart disease.

Charles Moore DeValin ⊕ Medical Director, Captain, U. S. Navy, retired, Philadelphia; Columbian University Medical Department, Washington, D. C., 1891; fellow of the American College of Surgeons; entered the U. S. Navy on Jan. 30, 1892; retired Aug. 1, 1933, on, or after, attaining statutory age; in 1924 a delegate from U. S. Navy to the American Medical Association; died at the Naval Hospital in Brooklyn June 8, aged 77, of arterial hypertension.

James Garfield Dwyer ⊕ New York; Queen's University Faculty of Medicine, Kingston, Ontario, Canada, 1905; specialist certified by the American Board of Otolaryngology; member of the American Academy of Ophthalmology and Otolaryngology and the American Otological Society; member and past president of the American Laryngological, Rhinological and Otological Society; affiliated with the Manhattan Eye, Ear and Throat Hospital; died in Kingston, Ontario, Canada, August 2, aged 65.

James Henry Ferguson, Clifton, Va.; Medical College of Virginia, Richmond, 1890; member of the American Medical Association; died August 1, aged 80, of arteriosclerosis and heart disease.

Irving H. Fowle, Milwaukee; Milwaukee Medical College, 1900; died August 1, aged 73.

Dugald Allan Galbraith, Lansing, Mich.; Detroit College of Medicine, 1905; member of the American Medical Association; affiliated with the Sparrow Hospital and St. Lawrence Hospital; died August 1, aged 72, of pulmonary edema.

John Conrad Giever, Spalding, Neb.; John A. Creighton Medical College, Omaha, 1920; member of the American Medical Association; served during World War I; for many years mayor of Spalding; city physician; died August 8, aged 54, of coronary occlusion.

Jacob Glauser, Philadelphia; Temple University School of Medicine, Philadelphia, 1928; also a graduate in pharmacy; served in the Atlantic and Pacific theaters during World War II; on the staffs of St. Mary's Hospital and St. Luke's and Children's Medical Center; died in the Jewish Hospital August 6, aged 49, of cerebral accident and ureterolithiasis.

Robert Hosea Good, Oak Park, Ill.; Rush Medical College, Chicago, 1902; member of the American Medical Association; past president of the Chicago Otolaryngological Society; served on the staffs of Garfield Park Hospital in Chicago and West

Suburban Hospital; died in Los Angeles August 28, aged 74, of gastric hemorrhage.

Louis Ammon Gould ⊕ Syracuse, N. Y.; Syracuse University College of Medicine, 1904; at one time on the faculty of his alma mater; served as school physician and for many years as physician for the city welfare department; formerly on the staffs of Syracuse University Hospital and Syracuse Free Dispensary; died August 1, aged 71, of coronary thrombosis.

Charles Herbert Johnson, Camden, N. J.; University of Maryland School of Medicine, Baltimore, 1909; died in Cooper Hospital July 12, aged 65, of injuries received in a fall.

Evelyn Ellen Annie Lowe, Brooklyn; Boston University School of Medicine, 1897; died August 2, aged 79.

Herbert Hall McAdams ⊕ Jonesboro, Ark.; University of Tennessee College of Medicine, Memphis, 1915; served as president of the school board; on the staff of St. Bernard's Hospital; died July 11, aged 63, of lymphatic leukemia.

Charles Milton McCoy, Lewistown, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1904; on the staff of Lewistown Hospital; died July 3, aged 73, of heart disease.

Robert Hugh McDonald ⊕ Cleveland; University of Toronto Faculty of Medicine, Toronto, Canada, 1922; diplomate of the National Board of Medical Examiners; fellow of the American College of Physicians; on the staff of the Cleveland Clinic; died July 20, aged 52.

James Gerard McGrath ⊕ Chicago; Loyola University School of Medicine, Chicago, 1921; on the staffs of Mercy and St. Anne's hospitals; died in the Mayo Clinic, Rochester, Minn., July 22, aged 52.

Ledge Wynn McNeill, Bartow, Fla.; University of West Tennessee College of Medicine and Surgery, Memphis, Tenn., 1912; died in the Morrell Memorial Hospital, Lakeland, July 16, aged 65, of coronary thrombosis.

Lawrence Theodore McNerthney ⊕ Tacoma, Wash.; Creighton University School of Medicine, Omaha, 1932; died in American Lake July 26, aged 40, of coronary thrombosis.

Frank Braun McNierney ⊕ Toledo, Ohio; University of Pennsylvania Department of Medicine, Philadelphia, 1908; formerly affiliated with the U. S. Public Health Service; medical examiner for the U. S. Marine Service; on the staff of St. Vincent's Hospital, where he died July 19, aged 63, of hypertension and cerebral thrombosis.

Thomas J. Mansfield, Muncie, Ind.; American Eclectic Medical College, Cincinnati, 1890; member of the American Medical Association; died July 22, aged 86, of carcinoma.

Harold Edward Marsh ⊕ Madison, Wis.; Tufts College Medical School, Boston, 1913; served in France during World War I; formerly affiliated with the Mayo Clinic in Rochester, Minn.; member of the staff of the Jackson Clinic; died July 12, aged 54, of lymphoblastoma.

Enoch Mather, Mount Clemens, Mich.; American Eclectic Medical College, Cincinnati, 1884; Medical University of Ohio, Cincinnati, 1886; National Medical College, Chicago, 1898; died July 7, aged 89, of arteriosclerosis.

William Ernest Merritt, Fancy Farm, Ky.; Marion-Sims-Beaumont Medical College, St. Louis, 1902; member of the American Medical Association; died July 4, aged 69, of carcinoma.

Albert W. Meyer, Bloomington, Ill.; Rush Medical College, Chicago, 1897; member of the American Medical Association; served as city physician and health officer; for many years on the U. S. Board of Pension Examiners; served as a member and president of the staff of St. Joseph's Hospital; died July 26, aged 77, of myocarditis.

Frederick Mason Miller, Binghamton, N. Y.; New York University Medical College, New York, 1896; fellow of the American College of Surgeons; member of the American Medical Association; on the staff and formerly member of the board of managers of Binghamton City Hospital; chief surgeon of the Erie Railroad; died July 9, aged 77, of coronary thrombosis.

John Welch Miller, Kansas City, Mo.; Kansas City Medical College, 1896; served on the staff of St. Margaret's Hospital in Kansas City, Kan.; died July 20, aged 91, of cardiovascular renal disease.

Harry Herbert Moore, Stafford Springs, Conn.; University of Vermont College of Medicine, Burlington, 1899; on the staff of Cyril and Julia C. Johnson Memorial Hospital; died in Hartford (Conn.) Hospital July 8, aged 78, of carcinoma of the prostate.

Joseph Hallock Moore ⊕ Huntington, W. Va.; State University of Iowa College of Medicine, Iowa City, 1929; diplomate of the National Board of Medical Examiners; specialist certified by the American Board of Otolaryngology; member of the American Academy of Ophthalmology and Otolaryngology; president of the West Virginia Academy of Otolaryngology; on the staffs of St. Mary's, Memorial and Veterans' hospitals; died suddenly, August 3, aged 45, of coronary occlusion.

Everett L. Morgan, Graham, Mo.; Central Medical College of St. Joseph, 1895; served during World War I; died in St. Francis Hospital, Maryville, July 12, aged 79, of uremia.

Edward Francis Murray, Burlington, Vt.; University of Vermont College of Medicine, Burlington, 1892; served during World War I; lieutenant colonel, medical reserve corps, U. S. Army, not on active duty; on the staff of Bishop DeGoesbriand Hospital; died July 20, aged 79, of arteriosclerotic heart disease.

Charles Patterson Nash, Alderson, W. Va.; College of Physicians and Surgeons, Baltimore, 1884; died July 12, aged 88.

Grant Vern Newcomer, Elwood, Ind.; Central College of Physicians and Surgeons, Indianapolis, 1891; served as city and county health officer; on the staff of Mercy Hospital, where he died July 9, aged 80, of cerebral hemorrhage.

Samuel Nicholas ⊕ *Philadelphia; University of the South* Medical Department, Sewanee, Tenn., 1904; also a pharmacist, affiliated with the Doctors' Hospital; died July 9, aged 67, of coronary occlusion.

Vernon Lee Norwood, Baltimore; University of Maryland School of Medicine, Baltimore, 1885; died July 13, aged 85, of cerebral arteriosclerosis and right hemiplegia.

George Edwin Obrist ⊕ Portsmouth, Ohio; University of Cincinnati College of Medicine, 1928; served as secretary treasurer of the Hempstead Academy of Medicine; shot and killed by an unknown assailant August 1, aged 45.

Lewellington D. Peck, Hastings, Minn.; Minneapolis College of Physicians and Surgeons, medical department of Hamline University, 1902; member of the American Medical Association; secretary and past president of the Dakota County Medical Society; served as mayor of Hastings, member of the school board and as an alderman; affiliated with St. Francis Hospital; died in St. Mary's Hospital, Rochester, Minn., July 4, aged 69, of cerebral thrombosis.

Alexander Monroe Peter, Whitesville, Mo.; Northwestern Medical College, St. Joseph, 1891; on the staff of Missouri Methodist Hospital in St. Joseph, where he died July 5, aged 77, of arteriosclerosis.

Edward John Phillips ⊕ Bradford, Pa.; University of Michigan Homeopathic Medical School, Ann Arbor, 1914; past president of the McKean County Medical Society; veteran of the Spanish-American War and World War I; physician for the public schools; served as a member of the Civil Service Board, on the defense board and examiner for the Selective Service Board; on the staff of the Bradford Hospital, where he died July 8, aged 72, of coronary occlusion.

Albert Winfrey Pigford ⊕ Tulsa, Okla.; Mississippi Medical College, Meridian, 1907; fellow of the American College of Surgeons; past president of the Tulsa County Medical Society; served during World War I; on the staff of the Claremore (Okla.) Indian Hospital; member of the consulting staff of St. John's Hospital; died July 26, aged 63, of carcinoma of the prostate.

Perry Charles Pluenneke, Overton, Texas; Southwestern University Medical College, Dallas, 1911; member of the American Medical Association; served during World War I; died in Dallas July 1, aged 59.

William Thomas Potter, Norfolk, Va.; Medical College of Virginia, Richmond, 1910; member of the American Medical Association; died in Norfolk General Hospital July 17, aged 59.

Allen Courtland Prichard, Hot Springs National Park, Ark.; Eclectic Medical College, Cincinnati, 1913; past president of the Arkansas Eclectic State Medical Board; died July 12, aged 64, of coronary occlusion.

Harry Philip Rank, Pine Grove, Pa.; Jefferson Medical College of Philadelphia, 1897; died July 26, aged 72, of coronary thrombosis.

Thomas W. Ranson, Cleveland; Cleveland University of Medicine and Surgery, 1894; died in Soldiers' and Sailors' Memorial Hospital in Penn Yan, N. Y., July 12, aged 77.

Frederick Cornwall Reed ⊕ Schenectady, N. Y.; Albany Medical College, 1902; past president of the Schenectady County Medical Society; served in various capacities on the staff of Ellis Hospital; died July 21, aged 72, of chronic endocarditis.

Walter Kellogg Reed ⊕ Boulder, Colo.; Northwestern University Medical School, Chicago, 1916; served during World War I; died in Alta Bates Hospital, Berkeley, Calif., July 11, aged 55, of cerebral hemorrhage.

William Carl Rentz, Miami, Fla.; Emory University School of Medicine, Atlanta, 1915; member of the American Medical Association; for many years affiliated with the Indian Service; associate attending physician at James M. Jackson Memorial Hospital; died July 8, aged 60, of cerebral hemorrhage.

Horace M. Robbins, Portland, Ore.; Tennessee Medical College, Knoxville, 1901; formerly a resident in Fossil, where he served as mayor, county health officer and coroner; served on the staff of the Dallas (Ore.) Hospital; died in the Hahnemann Hospital July 16, aged 80, of ulcer of the duodenum.

Joseph John Roberts ⊕ Baltimore; University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, 1916; president of the Society of Anesthesiology in Baltimore; on the staffs of the Bon Secours Hospital, Maryland General Hospital and St. Joseph's Hospital, where he died July 16, aged 58, of coronary occlusion.

Ethel Blackwell Robinson, New York; Woman's Medical College of the New York Infirmary for Women and Children, New York, 1895; died in Huntington, L. I., July 31, aged 76, of carcinoma.

Joseph A. Robinson, Darlington, S. C.; Howard University College of Medicine, Washington, D. C., 1893; died July 2, aged 79, of carcinoma of the prostate.

Ursula Joan Roche, New York; New York University College of Medicine, 1936; member of the American Medical Association; specialist certified by the American Board of Internal Medicine; on the staffs of the Bellevue and Lenox Hill hospitals; drowned while swimming at Quogue, L. I., July 23, aged 35.

John Hubley Schall ⊕ Brooklyn; Hahnemann Medical College and Hospital of Philadelphia, 1893; an Affiliate Fellow of the American Medical Association; fellow of the American College of Surgeons; formerly on the staff of the Cumberland Street Hospital; for many years on the staff of the Prospect Heights Hospital, where he died July 10, aged 75.

Theodore W. Schmidt, Cincinnati; Medical College of hio, Cincinnati, 1889; for many years affiliated with St. Mary's ospital, where he died August 2, aged 82.

John Elmer Snodgrass, Fort Myers, Fla.; Hahnemann Medical College and Hospital of Philadelphia, 1902; died July 9, aged 69, of heart disease.

Mary Lydia Hastings Arnold Snow, New York; Cooper Medical College, San Francisco, 1897; died in the Memorial Hospital of Greene County, Catskill, July 11, aged 79, of cerebral hemorrhage and cerebral arteriosclerosis.

Isidore Steinman ⊕ New York; Columbia University College of Physicians and Surgeons, New York, 1918; died June 24, aged 60, of heart disease.

Samuel Joseph Veach, Atwood, Ill.; Barnes Medical College, St. Louis, 1907; member of the American Medical Association; died in Douglas County Jarman Hospital, Tuscola, July 3, aged 78, of nephritis.

Walter Eugene Vogt, Brooklyn; Cornell University Medical College, New York, 1903; member of the American Medical Association; attending gynecologist at Bushwick Hospital; died June 27, aged 66, of coronary thrombosis.

William Walter, Bethlehem, Pa.; Jefferson Medical College of Philadelphia, 1890; died July 19, aged 81, of cerebral hemorrhage.

Willibald John Wehle, West Bend, Wis.; Wisconsin College of Physicians and Surgeons, Milwaukee, 1897; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1898; member of the American Medical Association; died in St. Petersburg, Fla., June 9, aged 76, of arteriosclerosis and diabetes mellitus.

John Montgomery West ⊕ Allentown, Pa.; Johns Hopkins University School of Medicine, Baltimore, 1901; on the staff of Allentown Hospital, where he died July 7, aged 71, of carcinoma of the prostate.

Carl Westman ⊕ Chicago; Bennett Medical College, Chicago, 1898; an Affiliate Fellow of the American Medical Association; formerly on the faculty of the University of Illinois College of Medicine; at one time physician for the White Sox; formerly on the editorial board of the *Journal of Physical Therapy;* died July 2, aged 78, of cerebral hemorrhage and hypostatic pneumonia.

Edgar S. Whaley, Carlisle, Ark.; Memphis (Tenn.) Hospital Medical College, 1910; member of the American Medical Association; past president of the Lonoke County Medical Society; local surgeon for the Rock Island Railroad; died June 13, aged 64, of heart disease.

Myron Treadway Whipple, Chicago; Medical College of Ohio, Cincinnati, 1893; member of the American Medical Association; died June 26, aged 80, of chronic nephritis and uremia.

Roy Elson Wiant, Detroit; Jefferson Medical College of Philadelphia, 1913; member of the American Medical Association; died June 19, aged 60, of heart disease.

Mary Wickens ⊕ Richmond, Ind.; Indiana Medical College, School of Medicine of Purdue University, Indianapolis, 1906; specialist certified by the American Board of Psychiatry and Neurology, Inc.; for many years affiliated with the Richmond State Hospital, Easthaven; died in Reid Memorial Hospital July 2, aged 73.

Claude Warren Williams, Pawhuska, Okla.; University of Wooster Medical Department, Cleveland, 1898; also a graduate in pharmacy; served during World War I; formerly affiliated with the U. S. Public Health Service Reserve and the U. S. Veterans' Hospital in Atlanta; died August 3, aged 74.

Ralph Williams, Los Angeles; University of Southern California College of Medicine, Los Angeles, 1893; member of the American Urological Association; fellow of the American College of Surgeons; formerly on the faculty of his alma mater; died in the Hollywood Presbyterian Hospital, June 24, aged 75, of shock following an operation for cancer.

Alpheus Keller Wilson, Jacksonville, Fla.; Medical College of the State of South Carolina, Charleston, 1909; member of the American Medical Association; specialist certified by the American Board of Otolaryngology; member of the American Academy of Ophthalmology and Otolaryngology; fellow of the American College of Surgeons; an examiner for local selective service board during World War II; affiliated with Duval County and St. Luke's hospitals; died in a local hospital July 24, aged 67, of coronary thrombosis.

Jules Alexander Wimberly, Chicago; Baylor University College of Medicine, Dallas, Texas, 1924; member of the American Medical Association; fellow of the American College of Surgeons; served on the staff of St. Joseph's Hospital; died July 26, aged 51, of cerebral hemorrhage and hypertension.

Adolph Mitchell Wood ⊕ Shelbina, Mo.; Missouri Medical College, St. Louis, 1899; served during World War I; secretary of the Shelby County Medical Society; died in the Veterans' Hospital in St. Louis, July 11, aged 68, of heart disease.

Walter Allen Wood, Oberlin, Ohio; University of Pennsylvania Department of Medicine, Philadelphia, 1901; member of the Medical Society of the State of Pennsylvania and the American Medical Association; served in France during World War I; for many years medical referee for the New York Life Insurance Company; died in Allen Hospital June 23, aged 73.

Thomas Eddy Wyatt, Louisville, Ky.; University Medical College of Kansas City, Mo., 1900; served during the Spanish American War and World War I; contract surgeon for the U. S. Army; died July 21, aged 70, of coronary thrombosis.

Henry Amos Wyllys, Palatka, Fla.; Northwestern University Medical School, Chicago, 1900; served on the staffs of the Proctor and St. Francis hospitals in Peoria, Ill.; died July 17, aged 71 of cirrhosis of the liver.

Harris H. Zimmerman, Red Bluff, Calif.; Medical College of Indiana, Indianapolis, 1902; for many years served as health officer; died July 7, aged 75.

PUBLIC HEALTH SERVICE

Pasquale Peter Coviello, Senior Assistant Surgeon, U. S. Public Health Service Reserve, North Bergen, N. J.; Regia Università degli Studi di Bologna Facoltà di Medicina e Chirurgia, Italy, 1941; served an internship and residency at St. Michael's Hospital in Newark, N. J.; commissioned on March 26, 1944 as an assistant surgeon in the U. S. Public Health Reserve; on May 4, 1946 promoted to senior assistant surgeon; assigned to coast guard; killed in a crash of an air transport command plane near Westover Field, Mass., July 9, 1946, aged 32, as he was returning to the United States for release from an overseas assignment with the U. S. Coast Guard.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Aug. 30, 1947.

The End of the Indian Medical Service

Under British rule European civilization has been introduced into India, and in this regard nothing has been more beneficent than the gift of Western medicine by the establishment of the Indian Medical Service. This began with the appointment in 1612 of John Woodall as the first surgeon general of the East India Company. The service was necessarily staffed by British officers until it was possible to train native ones. The termination of British rule has brought to an end this service, to which a tribute was paid in the Houses of Parliament by the Prime Minister and the Earl of Listowel. The latter moved in the House of Lords an appreciation of the work of the civil and military services. He said that the Indian Medical Service, though its primary function had been the care of the members of these services, had also contributed to the advance of medical science and had played a leading part in building up a modern system of applied medicine in India. Its research into the causation of malaria resulted in discoveries about the mosquito which enabled the Panama Canal to be built. In the application of medicine it reduced the death rate from cholera in India by two thirds, and in its mastery of the diagnosis and treatment of many tropical diseases it brought relief to thousands of victims. It was the pioneer, and for many years the only source, of medical education and the father of the three medical colleges which were founded in British India in the nineteenth century. As a result of this pioneer work India now possesses a well-organized medical profession of more than fifty thousand practitioners.

Penicillin and Other Antibiotics

The British Association for the Advancement of Science has resumed its annual meetings, which were interrupted by the war. At a joint meeting of the sections of chemistry and botany Sir Alexander Fleming, the discoverer of penicillin, opened a discussion on "Penicillin and Other Antibiotics." He defined an antibiotic as a substance produced by a living body which has a destructive or inhibitory effect on a micro-organism. Penicillin is not the first antibiotic used for the treatment of infections; instances of one microbe hindering the growth of another have been commonplace in bacteriology, and about fifty years ago a substance resulting from the growth of a bacterium was recommended for the treatment of diphtheria and other infections. However, the results were not dramatic and this substance disappeared. Penicillin has a powerful effect on some bacteria but is without action on others.

With regard to the administration of penicillin, Fleming pointed out that it is exceedingly diffusible and differs from the old antiseptics in that it is not poisonous to human cells. Penicillin is not readily or uniformly absorbed from the alimentary canal and so has to be given by injection. It rapidly gets into the circulatory system but is rapidly excreted by the kidney, the injections being repeated frequently. Much work is being done to obviate this disadvantage. Penicillin has to be used on the right microbes and administered in such a way that it reaches the infecting organisms in sufficient amount to kill them. It is no use to suck a few penicillin lozenges to cure a septic infection of the finger.

The success of penicillin had led workers all over the world to try to find a better antibiotic. It seems incredible that an agent whose discovery was due to a chance observation should be the best, but in spite of all the work which has been done penicillin remains supreme. The study of antibiotics is going to change medical treatment in many ways. What is possibly even more important than the effect of antibiotics on bacteria in the body is the discovery in these agents of new chemical linkages destructive to bacteria. With a knowledge of these linkages the chemist will doubtless be able to prepare modifications which have all the advantages and none of the disadvantages of the natural product.

Soils and Health

In the Agriculture Section Dr. W. G. Ogg in his presidential address reviewed present knowledge of the importance of soils to the health of plants, animals and human beings. One of the most interesting advances in the study of soil fertility has been the recognition of the part played by what are termed "the trace elements." In addition to the major plant foods—nitrogen, potassium, phosphorus and calcium—it is now known that traces of certain other elements are essential for normal health and growth. Up to the present this group of trace elements comprises boron, manganese, copper, zinc and molybdenum; all of which, except boron, are necessary for animals. Cobalt and iodine, which do not seem necessary for plants, are nevertheless required by animals. Little is known about how the trace elements act—what role they play in plant and animal nutrition—but possibly they are catalysts. They must be present in soil in available forms, and it has been noted that too much may be as detrimental as too little. The discovery of trace elements has cleared up the problems of many plant and animal diseases.

It is of great importance to agriculture to have as much information as possible about the natural distribution and availability of the elements concerned with the nutrition and health of plants and animals. Developments in methods of quantitative spectrographic analysis, both roentgenologic and optical, have been of great value in obtaining the necessary analytic data; man's knowledge of the distribution of trace elements in the earth's crust has been revolutionized. Much still remains to be learned about mineral deficiencies and excesses. In most cases they do not seem to affect the health of human beings, because as a rule man's food is drawn from such wide sources that a deficiency in one article of diet would probably be made good in another that is drawn from a different region. Probably more can be done for the improvement of health in the world today by providing ample supplies of food than in any other way. The propagation of unfounded beliefs about the harmful effects of fertilizers is detrimental to the interests of the community.

The Immunization of Young Children Against Diphtheria

In 1941 the Ministry of Health launched a national campaign to immunize children against diphtheria before their first birthday. The slogan is: "Diphtheria costs lives—Immunization costs nothing." The result has been a remarkable progressive fall in the number of cases and the number of deaths. Prewar figures averaged 58,000 cases and 2,800 deaths annually. In 1941 these figures had fallen to 50,797 and 2,641. In the following years the fall has steadily continued, until in 1946 the figures were only 18,284 and 472. The figures mean that for every 6 children who died from diphtheria before the war only 1 died in 1946 and that the number of cases has fallen by 40,000. Last year half a millon children under 5 years of age were immunized. The aim this year is to immunize 590,000 babies before their first birthday. It is believed that such a high level of immunization has been achieved among children that diphtheria could be eliminated as an epidemic disease if in each year 3 of every 4 babies were protected before reaching their first birthday. The total number of children immunized since the campaign began is more than 6,600,000.

ANKARA

(From Our Regular Correspondent)

Aug. 5, 1947.

Kala-Azar in Turkey

Although malaria prevention and control work has been under way for twenty years, malaria remains the foremost public health problem in Turkey. The public is now taking blood examinations as a matter of course; exploratory punctures of enlarged spleens are made and lately also sternal punctures.

The first publications concerning kala-azar in Turkey came from Prof. Dr. Ihsan Hilmi Alantar of the Istanbul University, who in 1937 and 1938 diagnosed 7 cases at the Istanbul Children's Hospital. Four of the patients were living on the Bosporus coast, 2 in Istanbul and 1 on the coast of the sea of Marmora. None had gone anywhere else. All the patients had been suffering from fever occurring at irregular periods, weakness, anemia and at intervals diarrhea. All patients had hard enlarged spleens extending as far as the umbilicus and even to the hypogastrium, and livers extending 3 inches beyond the ribs. The patients belonged to lower middle class and poor families. Only 1 child had from time to time played with a neighbor's dog; the others had played in places or streets where stray dogs were about but never had any close contact with dogs.

A boy aged 5, born and brought up in a small town on the coast of the sea of Marmora, was admitted to the Children's Hospital in May 1938. He had had an elevation of temperature at irregular periods for three years, subnormal temperatures for the last five months, nosebleeds from time to time and swelling of the abdomen. The patient had had treatment for malaria for six weeks; the temperature had come down but the general condition had become worse and the abdomen had continued to swell. On admission the child weighed 14 Kg. and measured 103 cm., his face was pale, he was apathetic, and the spleen was hard and very large, blood count revealed 2½ million red corpuscles, 4,000 white corpuscles, hemoglobin 49 per cent, and the value of the globulin was 0.9. Leukocyte count revealed segmented forms 44 per cent, young forms 5, monocytes 9, lymphocytes 42, eosinophils 0, basophils 0. The formol-gel test was positive; also the Chopra-Gupta test. Exploratory puncture of the spleen revealed Leishmania and plasmodia; sternal puncture Leishmania. While the child was under treatment with neostibosan it developed measles and died. The spleen and sternal punctures of the other 6 patients also revealed Leishmania donovani. The formol-gel test in the third, sixth and seventh cases was negative, the Chopra-Gupta test negative only in the sixth and seventh cases. All seven cases proved to be visceral leishmaniasis.

Bacteriologist and malarialogist Dr. Seyfeddin Okan, director general of the malaria prevention and control department of the Ministry of Health, diagnosed 23 cases of kala-azar through finding in the spleen and by sternal puncture Leishmania organisms in abundance. The formol-gel test was positive in all cases, the Chopra-Gupta test in only 17 cases; it was negative in 6 cases. The neostibosan treatment was successful except in 1 case. These patients, aged 1 to 16, were born and had always lived in Adana, Mersina and the environs except for 1 who had come from Hatay. None had had any contact with dogs. Most of these children had in the beginning been treated for malaria, were weak and anemic, and had enlarged spleens and livers. This makes it evident that on the Turkish coastal regions of the Mediterranean and the Aegean isolated instances of kala-azar exist, mostly in children and adults below the age of 20.

Although since then in the Istanbul, Smyrna, Ankara and Bursa general hospitals Leishmania organisms have been looked for in patients with enlarged spleens, they are rarely encountered. So far only 36 cases of kala-azar have been mentioned in Turkish medical literature. The last 3 cases were again found in the Marmora coastal region and at the Bursa General Hospital they were presented to the Bursa medical society. It was said that the Bursa climate is favorable to Leishmania. Here is a short history of 1 of the cases coming under observation at the Bursa General Hospital:

A youth aged 18, a native of Uzunköprü, Turkish Thrace, came to Bursa when 9 years old and has been nowhere else. He began to have chills and a fever in March 1946. Believing he had malaria, he took quinine and quinacrine. The fever continued, bloody diarrhea, abdominal pain and increasing weakness forcing him to consult a physician. The patient was pale, weak and emaciated, the abdomen was unusually swollen, the liver extended 1 inch below the ribs, and the spleen filled the left inguinal region and felt extremely hard. Lymph nodules the size of lentils and peas were present in the groins, armpits, neck and inner elbow joints. One month after the onset of the disease, when iodine was applied to the skin for blood examination, erythema and itching revealed iodine idiosyncrasy. Laboratory examination revealed normal urine. Blood coagulation occurred in six to twenty minutes. Duration of flow of blood was one to four minutes. Thrombocytes numbered 66,000, red corpuscles 2,800,000, white corpuscles 3,000. Sedimentation during the first hour was 140 mm. Monocytes numbered 12 per cent, lymphocytes 20 per cent, young neutrophils 4 per cent, segmented forms 50 per cent, stab forms 13 per cent, eosinophils 0, reticulocytes 1. The formol-gel test was positive within two minutes, the Ray test positive. Spleen puncture revealed Leishman-Donovan bodies in abundance on Giemsa prepared slides.

A dog which had been the patient's pet for three and a half years was often afflicted with scabies and her offspring were either born dead or died within a week. The dog had purulent, bleary eyes and keratitis. She had lost all her hair and had several superficial ulcerations. The liver and spleen were enlarged. Puncture of the spleen was made four times and of the liver twelve times. In the spleen smear were found in cultures the same Leishmania organisms as in the patient; in the liver none were found. Fleas were taken from the dog and crushed, but the preparations did not reveal any parasites, nor were ticks found on the dog.

Preparations of antimony were unobtainable. High dosage of penicillin lessened the fever and the general condition improved somewhat, but improvement was not considerable. Injections with neostibosan, procured with great difficulty, brought about excellent results. After ninety-five days of treatment the lymph nodes had almost disappeared, there was no fever, the spleen had receded to the umbilicus and the patient had gained weight. Sternal and spleen preparations still contained parasites. Neostibosan was again procured and after twelve 0.3 Gm. injections every other day parasites were no longer found in sternal and spleen preparations, but the formol-gel test was still very positive, and sedimentation 125 mm. The painful bloody, mucous diarrhea from which the patient had suffered from the onset of the disease was cured with ultraguanidine. Points of special interest are that the patient was an adult, the lymph nodules seen in children were enlarged, high dosage of penicillin failed to bring about satisfactory results, the patient had an idiosyncrasy to iodine, the patient developed a cough after neostibosan injections, and the colic symptoms disappeared after ultraguanidine treatment. The most noteworthy point of interest is the fact that the patient had very close contact with his dog; they used to sleep out in the garden during the summer, with the dog close to him. The parasites found in the patient and the dog were of the same size. Generally speaking, Turkish people have no great love for dogs, considering them unclean; their religion forbids contact with stray dogs, probably because of the danger of contracting rabies. Shepherd and orchard dogs are a special race and are well cared for.

To spread knowledge concerning the prevention of kala-azar in Turkey, to facilitate its early diagnosis, give information in regard to treatment and point the way to investigation, the Ministry of Health asked the late Dr. Server Kamil, professor of hygiene at the Istanbul University Medical School, to write a monograph on the subject. This fifty-four page monograph was published in 1934 by the Ministry of Health and distributed free of charge to all health organizations and institutions concerned.

To sum up, sporadic cases of kala-azar, though not numerous, are found in Turkey. The disease occurs in children and young adults under 25 years of age. The cases that have been observed have all come from the coastal regions of the sea of Marmora, the Aegean sea and the Mediterranean.

Tumors of the Eye in Turkey

Before the Turkish Medical Society of Istanbul Dr. Nuri Fehmi Ayberk reported his experience as an eye specialist to the Haidar Pasha Model Hospital. He discussed at length 27 eye tumors encountered among the 70,000 eye patients he examined during the last ten years. There were 13 epitheliomas of the eyelids, 8 in men and 5 in women between the ages of 40 and 70. In these cases 60 per cent of the tumors were located at the inner angle of the eyelid. Dr. Ayberk attributed this location to age and occupation, advanced age causing relaxation of the orbicularis and eversion of the lacrimal point and the occupation of farming engaged in by the majority of these cases leading to chronic conjunctivitis due to exposure of the eyes to strong sunlight and dust. These causes give rise to continuous lacrimation, causing irritation of the skin and obliging the patient to wipe the affected region often, thus facilitating the development of the tumor. Of the tumors of the conjunctiva one was a papilloma originating at the upper eyelid; the other, resembling a melanosarcoma, proved to be a benign tumor originating at the lacrimal caruncle. Dr. Ayberk saw 7 carcinomas of the eyeball. There were 3 internal tumors of the eye, 1 primary sarcoma of the choroid and 2 gliomas. Among the tumors of the orbit there were 1 osteoma and 1 benign tumor of the optic nerve. In conclusion Dr. Ayberk said he had not seen any tumors caused by parasites.

BUENOS AIRES

(From Our Regular Correspondent)

Aug. 10, 1947.

Dementia Paralytica Treated with Penicillin

According to a communication to the Society of Neurology and Psychiatry of the Argentine Medical Association, Prof. Dr. Roque Orlando, director of the neuropsychiatric service and the center for malaria therapy of the Hospicio de las Mercedes of Buenos Aires and his collaborator Dr. M. Arndt treated within one year (August 1945-August 1946) 63 patients with penicillin; most of them had dementia paralytica, only 6 syphilis or other forms of neurosyphilis. They administered 2,000,000 Oxford units in doses of 20,000 each every three hours, intramuscularly. The temperature rose in some cases during the first days to 39 and 40 C. for various hours. Other manifestations or complications have not been observed. Five patients died after this treatment but for other causes (current complications of the disease).

Although the time of observation is still too short for definite conclusions, the authors are already able to confirm that the technic is easy and absolutely harmless. The results are considerable improvement in 10 of the 57 cases, a certain amount of improvement (although without important progress) in 11 cases, transitory improvement in 8 cases, no modifications in 15 cases; getting worse 3 cases; 4 died without modifications, and from 6 patients follow-up results were not obtainable. The improvement has been observed immediately after the completion of treatment or only several weeks or months afterward. The good results have been observed in initial cases or during the acute period, when they showed great excitation, euphoria, megalomania and the like but also in some advanced cases. In a large portion of these cases the psychotic symptoms disappeared completely. In 21 of 51 patients the cerebrospinal fluid showed favorable modifications of the inflammatory part of the paralysis, similar to the reaction after malaria therapy, but no important changes in the Wassermann or the Lange test. The results of penicillin therapy seem inferior to those after malaria therapy. It seems convenient to use both methods, administrating first 2,000,000 units of penicillin intramuscularly and then malaria therapy. It is possible that 2,000,000 units of penicillin is not sufficient; therefore a new series with 4,000,000 has been initiated.

Prenatal Tuberculosis

Until the investigations about to be described had been made, only isolated cases of prenatal tuberculosis had been known. The author who had reported the most cases was Ariztía of Santiago de Chile. No other author had reported more than 3 cases, and most authors only 1 case. Till now there has been only one review of the pathologic anatomy of this subject, by Morris Siegel of Chicago, but not one concerning the clinical aspect.

Drs. Carlos A. Urquijo and Ramón I. Latienda of Buenos Aires (Hospital Tornú) have made a thorough investigation of this question. It is the first study which describes particularly the symptomatology of prenatal tuberculosis. They observed 19 cases, 18 of them in mothers with serious tuberculosis who died in childbed. The majority of the children had a weight at birth of less than 2,800 Gm. The tuberculin reactions are mostly negative in these children, probably because of the high hydrophilia of the skin of the newborn.

The 19 cases of transplacental transmission of tuberculosis can be classified thus: among 156 children born prematurely of seriously ill mothers, 15 (9.7 per cent); among 62 children born at term of seriously ill mothers, 3 (4.8 per cent); among 1,008 children born at term of seriously or not seriously ill mothers, 1 (0.1 per cent) (very seriously ill means mothers who died from tuberculosis within sixty days after childbirth).

In their investigations, which are yet unpublished but for which they received the Juan Carlos Navarre prize of the National Academy of Medicine of Buenos Aires, the authors conclude that when a child has been born from a gravely tuberculous mother who has died in childbed, and particularly in the case of a prematurely born child we have to bear in mind the diagnosis of prenatal tuberculosis if the following syndrome is present even if it is incomplete: (*a*) a rather long asymptomatic period, without fever, and with progressive loss of weight; (*b*) later on, diminution of weight and irregular fever; (*c*) "cough without coryza," an essentially important symptom; (*d*) hepatosplenomegaly; (*e*) spherical abdomen and vicarious thoracoepigastric circulation (medusa head); (*f*) anorexia. If these symptoms are present almost constantly from 1½ months of age, they permit at least the presumptive diagnosis of prenatal tuberculosis even if the tuberculin reaction is negative and the x-ray appearance normal.

The relative frequency of the diverse primary localizations of prenatal tuberculosis has been in 98 cases, i. e. 19 of the authors' and 79 found in the literature: (*a*) lungs, (*b*) liver, (*c*) both of these, (*d*) others (intestine, ear). The organs most affected are the lungs, spleen, liver, intestine, kidneys, diaphragm, thyroid, skin, adrenals, stomach, tonsils, meninges, pancreas, heart, bone tissue, testicles and ear.

The most frequent lesions are macronodular, micronodular, miliary and submiliary in the liver, spleen and lungs, in the latter with or without a cavity; ulcerations and follicular reactions in the intestine; pseudofollicular ulcerations in the stomach; miliary and submiliary lesions in the rest of the organs. The only striking fact which differentiates the anatomic picture of prenatal tuberculosis from the other forms of generalized tuberculosis of the nursling is the high proportion of caseous adenopathy of the hepatic hilus.

Further Results with the Test of Galli-Mainini

Dr. Galli-Mainini's new test for determining pregnancy (The Journal, August 2, p. 1196) differs from other methods through its high (probably maximum) specificity, maximum rapidity, maximum simplicity of technic, minimum cost and *elimination of every subjective factor of interpretation.* The great advantages of this new method have been confirmed by 150 observations made by Drs. Pedro Figueroa Casas, Luciano Belizan and Juan J. Staffieri of the department of gynecology, department of endocrine diseases at the Italian Hospital at Rosario. In 99 of 100 cases of pregnancy the reaction was positive; in the 100th case it was negative, but the Friedman test was positive (while in another case the Friedman test was negative and the Galli-Mainini positive). In 2 cases of threatened abortion the Galli-Mainini test was positive, but negative in 2 cases of incomplete and 1 of complete abortion. One of the cases is particularly interesting: after fifteen days of amenorrhea the test was positive but after two months negative, and a few days afterward abortion occurred. The earliest date for the test is seven days of amenorrhea, but sometimes only the tenth or twelfth day. Earlier cases have not been observed by these authors.

The observations have been made during fall, with a temperature of 15 to 20 C. When it became colder, the animals did not react with the same activity, and reactions became negative; but afterward they were again positive when the toads d been put in tepid water and brought to warmer places. The st time for making the test is three hours after the injection f the urine, but it is already positive in 95 per cent after two hours.

The test was negative in 39 other cases of gynecologic trouble, the menopause and other conditions; also in 6 men.

Treatment of Chronic Nephritis with Testosterone

Drs. R. Q. Pasqualini and A. Imbriano have treated 1 case of subacute nephritis and 1 of chronic nephritis with prolonged administration of testosterone. In the first case this treatment was begun three months after the appearance of symptoms of hypertensive encephalopathy, and 900 mg. was administered in eleven weeks. In the second case treatment was begun fourteen months after the first symptoms, and 675 mg. was administered in eleven weeks. Both patients tolerated this procedure well with favorable effect, more apparent in the subacute case; in the second patient the proteinuria and uremia continued, although in lesser degree. The effect was particularly accentuated in the function of tubular resorption. Thus, the tubular activity becomes intensified and is able to regenerate, at least in part, its function, although the glomerular symptoms cannot be cured in all cases.

First Argentine Congress on Proctology

The first Argentine Congress on Proctology was held early in April at Buenos Aires. Well known Argentine and other South American specialists attended the meeting. Dr. J. Arnold Bargen of the Mayo Clinic was honorary president. The main official topic was ulcerative colitis. Drs. Carlos M. Barzizza, Andrés Bianchi, Carlos Bonorino Udaondo and Pedro A. Maissa were respectively speakers on microbiology, pathologic anatomy and general and roentgen pathology of the disease. Drs. Manuel M. Ramos Mejia, Oscar E. Napp and Norberto Stapler were respectively speakers on medical, surgical and dietetic treatment of the disease. The National Academy of Medicine had an extraordinary session to honor Dr. Bargen, who spoke in this session on "Origin and Development of Cancer of the Intestine."

Chronic Myocarditis in Chagas's Disease

Dr. C. Romaña of Tucumán carried on histopathologic studies in a case of chronic myocarditis caused by Chagas's disease, in which the characteristic lesions of the process were found in the heart. The case had been diagnosed clinically during life. Nests of Trypanosoma cruzi were found in the heart by postmortem studies, which finding was a proof of the origin of the disease. This is the first case of chronic myocarditis caused by the organism of Chagas's disease ever reported in Argentina in which the parasite of the disease was found in the heart.

The Value of Streptomycin

The Department of Public Health of the Argentine Republic has published a communication to the effect that streptomycin is a very efficient medicament for certain infectious diseases, but that its action is practically nil in pulmonary tuberculosis, and that for the time being it is preferably to treat this disease with the classic methods. *Owing to the very small quantity of* streptomycin available in the country, it must be reserved for diseases in which its effect is certain.

Crusade Against Cancer

A regional institute of new growths has been opened at Tucumán. There are available 350,000 Argentine pesos for habilitation of the institute, 55,200 pesos for salaries and 74,800 pesos for other expenses. In the northern region of Argentina there is no organization for patients with cancer. The patients are transported to Buenos Aires for roentgen treatment. Fifty per cent of patients with cancer in the northern region die without any medical care.

Brief News

Dr. Bernardo A. Houssay was appointed Doctor *Honoris Causa* by the faculty of Medicine of Geneva, Switzerland, when the faculty commemorated the seventieth anniversary of the foundation. Dr. Houssay was also appointed honorary member of the Academy of Medicine of New York.

Dr. Gregorio Aráoz Alfaro was recently appointed Professor *Honoris Causa* by the University of Rio de Janeiro.

A new medical magazine is being published in Buenos Aires: *Cirugia*, edited by a group of surgeons under the leadership of two prominent Argentine surgeons, the two Finochiettos. The well presented monthly is dedicated to all Latin American surgeons.

The professors ("titulares," i. e. who have a chair and are director of a clinic or an institute of the medical faculty) who had to retire or had retired a short time ago, have now been replaced. Dr. Tulio Martini has been appointed to the First Medical Clinic (chair of Professor Castex), Dr. Octavio M. Pico Estrada to the Second Medical Clinic (chair of Professor Romaño), Dr. Orestes E. Adorni for medical pathology, Marcial I. Quiroga for dermatology and syphilis, Dr. Carlos P. de Nicola for the Fourth Surgical Clinic (chair of Professor A. Ceballos), Dr. Anibal Ruiz Moreno for history of medicine (Professor Beltrán has now the chair of legal medicine instead of Professor Nerio Rojas, who retired), and Dr. Julio E. Bazán for obstetrics.

The Argentine branch of the National Gastroenterological Association elected Dr. Arturo Richieri president for the period 1947-1948.

An International Congress of Hospitals will be held at Buenos Aires in October. It is organized by the Asociación Argentina de Hospitales under the auspices of the Secretariat of Public Health.

Correspondence

INSTITUTE OF ANDEAN BIOLOGY FOR STUDY OF HIGH ALTITUDE PHYSIOLOGY

To the Editor:—The Institute of Andean Biology, a medical research institution chiefly devoted to the study of the effects of a high altitude environment on the human body, and which is affiliated with the Faculty of Medicine of the University of San Marcos (Lima, Peru), has under construction a new laboratory in Morococha, in the Andean zone. Funds have been raised to cover the total cost of the land and building.

This laboratory will occupy a land area of 335 square meters (400 square yards) with two floors, the first one will consist of an office, two large and four medium-sized laboratories, a dark room, a ward with three beds and sanitary services, a storeroom and an animal house. The second floor will include four bedrooms (each with a bathroom), for eight persons, a dining room (which will be also used as library and conference room), a pantry and a sleeping room for servants. The laboratory will be provided with heat, running cold and hot water and electricity (220 and 110 volts). Connected to this building is the medical department of a mining company, where x-ray facilities are available. Food may be obtained from this company.

Morococha, where the laboratory is being built, is a mining town with a permanent population of about 4,000 inhabitants, most of whom are of the Indian race; there are also a considerable number of white persons; its altitude is 4,540 meters (14,900 feet). It is located at 150 kilometers (93 miles) from Lima (at sea level), and this distance may be traveled by automobile on a good road in about three and a half hours. The average barometric pressure in Morococha is 430 mm. of mercury.

The road connecting Lima with this town goes through several small populated places, which are located at different altitudes, and 10 kilometers (6 miles) before it reaches Morococha it passes through a mining camp located at an altitude of 4,850 meters (15,920 feet). Forty kilometers (25 miles) from Morococha is Oroya, altitude 3,730 meters (12,230 feet), where a mining organization runs an eighty bed hospital provided with all modern facilities. Farther down on the eastern slope of the Andes the Institute of Andean Biology operates a laboratory in the city of Huancayo, of about 30,000 inhabitants and at an altitude of 3,100 meters (10,170 feet).

In Lima, at sea level, the institute has several physiologic, chemical and clinical laboratories provided with adequate equipment, mainly obtained through donations from American institutions, such as the Rockefeller Foundation. Most of the staff members have been trained in the United States on the basis of fellowship grants.

The location of the new high altitude laboratory in a town with a permanent population, also its short distance and easy access from sea level, will allow investigations concerning the effects of a low pressure environment on human beings and animals born and raised under such a condition and on newcomers. It will also be possible to carry out studies on men who arrive at sea level after a permanent or long residence at high altitudes; finally, additional observations may be made at different altitudes, in places which range from sea level up to 4,850 meters (15,920 feet), where obtained blood, air and other samples may be transported to the laboratories for analysis. Weather conditions allow continuous operation of and access to the high altitude laboratory throughout the whole year, although transportation is facilitated during the dry season (May to October).

The Institute of Andean Biology has already made some high altitude studies, some of them still under way, in the fields of respiration, circulation, hematology, metabolism, pharmacology, fertility, industrial hygiene (cases of silicosis and lead poisoning) and clinical illness (acute and chronic mountain sickness and so forth).

Considering the favorable opportunities which a laboratory of the characteristics just described will provide for the study of high altitudes and anoxic problems in general, the institute hopes that it may interest some of the American foundations and universities to establish a permanent connection with it, through a scientific and economic agreement which will permit its equipment and maintenance in such a way that these institutions may at any time send research workers, who will find constant facilities to carry out definite investigations, both at sea level and at high altitudes, either independently or in collaboration with the staff of the Institute of Andean Biology. Incidentally, it may be mentioned that Lima, and in consequence Morococha, are only twenty hours air travel distance from New York.

We hope to obtain American help in the project. We sincerely believe that it will serve not only to aid the organization of a high altitude laboratory, with facilities perhaps unique in the world for the study of the effects of a low pressure environment, but also to enlarge the friendly and scientific relations between the medical institutions of North and South America.

Carlos Monge, M.D.
Alberto Hurtado, M.D.
The Institute of Andean Biology,
Faculty of Medicine,
Lima, Peru.

THE PHYSICIANS FORUM, INC.

To the Editor:—In your editorial "Propaganda Activities of Government Agencies" appearing in The Journal, August 9, page 1240, you state that the Physicians Forum is "said to be a propaganda agency for the Wagner-Murray-Dingell Bill." You further quote the House committee as finding "that most of this literature, as distributed by . . . the Physicians Forum, originated in the Bureau of Research and Statistics of the Social Security Board. . . ."

The Journal has quoted the report of the Committee on Expenditures in the Executive Departments and therefore cannot be accused of originating these statements. The fact remains, however, that both these statements are incorrect, and the committee is completely in error in its findings.

The Physicians Forum was founded before the introduction of the first Wagner-Murray-Dingell bill and is an organization of physicians interested in all phases of medical care. The Forum believes that national health insurance is the only ultimate solution for the problem of the proper distribution of adequate medical care and has publicly supported the Wagner-Murray-Dingell bill as one of its activities.

All the literature published by the Forum is and has always been prepared by physicians who are members of the organization. None of it was inspired by, none of it originated in, the Bureau of Research and Statistics of the Social Security Board.

This letter is sent to you for publication to correct the misinformation unwittingly spread in your editorial.

George D. Cannon, M.D., Secretary, New York.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Charitable Hospitals in Relation to Taxes for Workmen's Compensation.—This was an action to test the validity of an order of the Department of Labor and Industry made pursuant to a statutory enactment. From a decision holding the statute unconstitutional, the department appealed to the Supreme Court of Washington.

In 1945 (chapter 89, Laws 1945) the Washington legislature passed a law which provided:

> An Act giving workmen's compensation benefits to persons engaged in hazardous and extrahazardous occupations in charitable institutions. . . .
>
> Section 1. Every person employed in a hazardous and/or extrahazardous occupation by an individual, firm, association or corporation operating a charitable or nonprofit institution, enterprise, business or establishment. shall be entitled to the benefits of chapter 74, Laws of 1911, and all amendments thereto relating to compensation for injured workmen.

By way of explanation the Supreme Court said that it must be noted that, although the act does not in terms purport to amend any existing law, it (1) purports to extend the benefits of a series of former acts to workmen engaged in hazardous, as well as extrahazardous, occupations; (2) makes no attempt to define or distinguish between hazardous and extrahazardous occupations; and (3) gives notice in its title that it applies only to employees of "charitable institutions," but, in the body of the act, includes every person engaged in any hazardous or extrahazardous occupation "by an individual, firm, association or corporation operating a charitable or nonprofit institution, enterprise, business or establishment." After passage of this act, the administrative department charged with its enforcement issued the following order:

> To All Branch Offices:
>
> Every person employed in a hazardous and/or extrahazardous occupation by an individual, firm, association or corporation operating a charitable or nonprofit institution, enterprise, business or establishment shall be entitled to the benefits of Pierce's Perpetual Code 702 to 718, chapter 74, Laws of 1911, and all amendments thereto relating to compensation for injured workmen.
>
> The Department has decided to create a new class to include all of the new contributors created under this law. The new class is 60-2 and the 1945 rates will be $.004 per workmen hour for industrial insurance and $.002 per workman hour for medical aid. effective June 6, 1945. For your guidance we are listing a few answers to possible questions. (1) All employees of such organizations that receive remuneration in any form are to be included. (2) All employees, regardless of their duties, are to be reported under the one class. (3) Churches and church organizations are exempt. (4) The articles of incorporation or the by-laws of such organizations should be consulted to determine whether or not any organization is nonprofit. We suggest that you contact all such organizations in your district and attempt to have all of them reporting when the new law takes effect.

It will be noted, said the Supreme Court, that the order directs (1) that every employee of a charitable or nonprofit institution is to be included whether his work is hazardous or extrahazardous, and (2) that they are all placed in one class, and the same rate of contribution is provided as to all, this whether the individual workman operates a power buzz saw or a fountain pen. Furthermore, the court continued, although it is indisputable that a church is, as a matter of law, a charitable institution, it is ordered that "(3) churches and church organizations are exempt."

The first question to be determined by the court was whether chapter 89 was an amendment or a supplemental act. Assuming it to be an amendment, the court pointed out that the Washington constitution provides that "no act shall ever be revised or amended by mere reference to its title, but the act revised or the section amended shall be set forth at full length." The result desired by such a provision is to have in a section as amended a complete section, so that no further search will be required to determine the provisions of such section as amended. In chapter 89 there is no reference to any title in the statute, but, said the Supreme Court, it actually changes at least four of the basic paragraphs of the original act. Considered as an amendment, therefore, the act fails to comply with the constitutional requirement that the act revised or the section amended shall be set forth at full length.

The department, however, insisted that the act was a supplemental act and not an amendment. Supplemental legislation, said the Supreme Court, must be tested by answering the following question: Can a person of ordinary intelligence mistake its meaning? Can we know what the legislature intended without referring to any other act or statute? Counsel representing the department say in their final brief: "Chapter 89 is complete in itself, it has only one purpose and that purpose only to bring in the men and women who received pay from charitable institutions for working around machinery or as janitor or in hazardous occupations." The auditor of the department, however, testified as follows: "Q. Now Mr. Graves, you found no guide or standard in chapter 89, did you, that would serve as a standard or guide for you in fixing the classifications? A. None whatever. Q. Then you did the only thing you saw to do, is to turn to that section of the existing statute of the workmen's compensation act and try to apply the guide that you found there? A. That is correct." It is clear, said the court, that neither the department nor the members of this court can "know full well what the legislature intended without referring to any other act or statute."

We are further of the opinion, the Supreme Court concluded, that chapter 89 violates section 19 of article II of the constitution, which provides that "no bills shall embrace more than one subject, and that shall be expressed in the title." This provision or its equivalent is found in all or nearly all state constitutions. It is universally agreed that one of the principal objects of this constitutional provision is to fairly apprise the people, through such publication of legislative proceedings as is usually had, of the bills being considered, to the end that persons or institutions affected by such bills may have an opportunity of being heard thereon, by petition or otherwise, if they so desire. Such publication is usually, if not almost universally, made by publishing the titles. Clearly, the title to this bill is very restrictive. It gives notice of a proposed bill that affects "charitable institutions" only, and no other, but in the body of the act it is made applicable to nonprofit institutions as well. There is a wide distinction between charitable institutions and nonprofit institutions in the state.

The judgment of the trial court in holding the act to be unconstitutional was accordingly affirmed.—*Swedish Hospital v. Department of Labor and Industry, 176 P. (2d) 429 (Wash., 1947).*

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

BOARDS OF MEDICAL EXAMINERS
BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Examinations of the boards of medical examiners and boards of examiners in the basic sciences were published in The Journal Oct. 4, page 307.

NATIONAL BOARD OF MEDICAL EXAMINERS

National Board of Medical Examiners: *Part III.* Durham, N. C., Oct. 21-23. Exec. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia 2.

EXAMINING BOARDS IN SPECIALTIES

American Board of Neurological Surgery: *Oral.* Chicago, May or June. Final date for filing application is Feb. 1. Sec., Dr. W. J. German, 310 Cedar St., New Haven, Conn.

American Board of Obstetrics and Gynecology: *Part I. Written.* Various Centers, Feb. 6. Final date for filing application is Nov. 1 Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh 6.

American Board of Ophthalmology: Chicago, Oct. 6-12. Sec., Dr. S. Judd Beach, 704 Congress St., Portland, Me.

American Board of Orthopaedic Surgery: *Part I.* April-May. Applications are accepted for the next examination until Jan. 15, 1948.

American Board of Pediatrics: Dallas, Dec. 5-7. Philadelphia, Jan 9-11. Sec., Dr. Lee F. Hill, 718 Royal Union Bldg., Des Moines 9.

American Board of Plastic Surgery: Examinations are given in April and November of each year in the home town of applicants. Sec., Dr. Robert H. Ivy, 1930 Chestnut St., Philadelphia.

American Board of Psychiatry and Neurology: *Oral.* May 1948. Final date for filing application is Feb. 15. Sec., Dr. F. J. Braceland, 102-110 Second Ave., S.W., Rochester, Minn.

American Board of Radiology: *Oral.* Chicago, June 1948. Final date for filing application is March 1. Sec., Dr. B. R. Kirklin, 102-110 Second Ave., S.W., Rochester, Minn.

American Board of Surgery: *Written.* Various Centers, March. Final date for filing application is Dec. 1. Sec., Dr. J. S. Rodman, 225 S. 15th St., Philadelphia 2.

American Board of Urology: Chicago, February. Final date for filing application is Nov. 1. Sec., Dr. Harry Culver, 1409 Willow St., Minneapolis 4.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1937 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied with stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Heart Journal, St. Louis

34:1-150 (July) 1947

Observations on Changes in Ventricular Complexes Produced by Bundle Branch Block, with Special Reference to Hypothesis of Electrical Axis and Concept of *Dextrocardiogram* and Levocardiogram. C. C. Wolferth and Mary M. Livezey.—p. 1.
*Tobacco Angina: Electrocardiographic Study. J. M. Bryant and J. E. Wood Jr.—p. 20
Technic of Fetal Electrocardiography. S. H. Blondheim.—p. 35.
*Circulatory Adaptations in Ayerza's Syndrome—Black Cardiacs. A. C. Taquini, J. C. Fasciolo, J. R. E. Suarez and H. Chiodi.—p. 50.
*Effects of Intravenous Injection of Nicotine on Circulation: In Normal Persons and in Patients with Cardiovascular Disease. Margaret N. Boyle, R. Wegria, R. T. Cathcart, J. L. Nickerson and R. L. Levy. —p. 65.
*Fractional Circulation Times Using Fluorescent Tracer Substances. T. Winsor, W. Adolph, W. Ralston and G. M. Leiby.—p. 80.
Syndrome of *Rupture* of Aortic *Root* or Sinus of Valsalva Aneurysm into Right Atrium. G. R. Herrmann and N. D. Schofield.—p. 87.
Nongangrenous Frostbite of Feet. D. V. Holman and M. Pierce.—p. 100.
Diagnosis of Tricuspid Valve Disease. S. Aceves and R. Carral.—p. 114.

Tobacco Angina.—Bryant and Wood investigated the effect of smoking on the electrocardiograms of 16 patients with coronary disease. All the patients had smoked for a long time, but the majority should probably be considered moderate rather than heavy smokers. The diagnosis of coronary disease was made on the basis of a history typical of angina pectoris, abnormal electrocardiographic findings at rest or abnormal electrocardiographic changes precipitated by exercise. In 2 instances diagnosis of recent anterior myocardial infarction was made on the basis of diagnostic changes in the precordial electrocardiogram. After the patient had rested in the recumbent posture for a time sufficient to give a basal heart rate, a control electrocardiogram was taken. Immediately afterward the patient smoked two cigarets of the brand to which he was accustomed. A second electrocardiogram was taken about ten minutes later when he had finished smoking or sooner if he experienced discomfort in the chest. One instance of pure tobacco angina was discovered. In another instance the pain was precipitated by exertion and by tobacco. Neither patient had suspected that his symptoms were related to smoking. Minor changes in the T wave induced by smoking usually represent a physiologic response to an increase in the heart rate and not to myocardial ischemia. This phenomenon occurs in patients with angina pectoris as well as in normal subjects but is not associated with anginal pain. The cardiovascular effects of tobacco smoking vary greatly from person to person and in the same person from time to time. It is possible that the use of tobacco plays a more important role in determining the symptoms of coronary disease than has been realized in the past.

Circulatory Adaptations in Ayerza's Syndrome (Black Cardiacs).—According to Taquini and his associates, clinical and anatomic studies have led to the conclusion that Ayerza's disease is a form of chronic cor pulmonale with cyanosis. Sclerosis of the pulmonary artery, which has been considered very important, is actually only secondary to the chronic bronchopulmonary disturbances that determine the disease. Studies made on 16 patients with Ayerza's syndrome enabled the authors to demonstrate the existence in all patients of alveolar hypoventilation, diminution of oxygen tension in the arterial blood, increase of the carbon dioxide tension, diminution of p_H, hemoglobin increase, increase of blood volume and increase of the circulation time. Alveolar hypoventilation, as well as inadequate distribution of gases in the lungs, easily explains the anoxemia observed in most of the patients studied. Anoxemia was also fundamental in producing an increase in hemoglobin and blood volume. Increase of hemoglobin held the amount of oxygen in the blood in quantities near normal, even though a definite decrease of oxygen tension existed. Although blood velocity was decreased, an increase in blood volume permitted normal arteriovenous difference and cardiac output. Decrease in blood velocity and increase in the volume of the vascular bed in patients with Ayerza's syndrome explain how the heart can maintain normal minute output and arterial blood pressure within normal limits in spite of the presence of a decided increase in the viscosity of the blood.

Effects of Intravenous Injection of Nicotine on the Circulation.—Boyle and his associates gave intravenous injections of 2 mg. of nicotine bitartrate to 46 subjects. These included 18 normal persons, 24 patients with coronary heart disease and 4 with peripheral vascular disease. Observations were made on changes in the heart rate, blood pressure, cardiac output and electrocardiogram. The amount of nicotine alkaloid contained in 2 mg. of the bitartrate is approximately 0.6 milligram. This corresponds to the estimated amount of nicotine absorbed on inhaling the smoke of a cigaret five times in the course of one minute. A comparison was made of the average changes observed in heart rate, blood pressure and cardiac output, but no significant differences between the three groups were apparent. There was much less variation in repeated tests on the same person than on different persons. There were no significant differences in reaction between smokers and nonsmokers. After the injection of nicotine, slight changes in the electrocardiogram were observed in some members of all groups. Significant changes were observed in 4 patients with coronary heart disease. In 2 of these, who suffered from spontaneous anginal attacks, pain was associated with the appearance of electrocardiographic changes. In all groups individual differences in sensitivity to nicotine were evident in the number and severity of the symptoms that followed its injection. The most frequent complaint was dizziness. Other symptoms were tingling, faintness and nausea. Vomiting and brief circulatory collapse occurred in one normal young man who had never smoked. Variation in the effects of nicotine on the circulation is as great in patients with cardiovascular disorders as in normal persons. This variation depends to a greater extent on individual susceptibility than on the presence of disease. In some patients with coronary heart disease the injection of nicotine induces a state of coronary insufficiency. This may be the result of constricting the coronary arteries or of increasing the work of the heart. Probably both mechanisms are concerned.

Fractional Circulation Times as Revealed by Fluorescent Tracer Substances.—According to Winsor and his associates the study of vascular dynamics has been facilitated by the newer tracer methods. They demonstrate the use of riboflavin as a fluorescent tracer substance. The technic employed was to raise a histamine wheal on various portions of the body to which the circulation time was to be measured. The volar surface of the forearm near the antecubital fold was used for arm to arm times and the dorsum of the foot was used for arm to foot times. During the developing phase of the wheal a fluorescent material was injected into an antecubital vein. The time was measured from the beginning of the injection to the first appearance of yellow-green fluorescence in the periphery of the wheal. Fluorescence was excited by a 100 watt CH-4 spot ultraviolet lamp fitted with a Corning 586 filter with maximal emission at 3,600 angstrom units. Riboflavin is a useful fluorescent tracer substance of particular value in determining the circulation times in infants and children. Properly controlled circulation times to the foot are, under certain circumstances, a more sensitive measure of congestive heart failure than are measurements made to shorter segments of the cardiovascular system. Fractional circulation times are useful in comparing circulatory dynamics in various regions of the body and are an aid in the diagnosis of certain cardiovascular states.

American J. Obstetrics and Gynecology, St. Louis

54:1-178 (July) 1947. Partial Index

Prophylaxis of Hemolytic Disease of Newborn. D. H. Kariher, with technical assistance of Dorothy I. Miller.—p. 1.
Study of Two Transfusion Deaths Due to Rh Incompatibility. B. F. P. Williams.—p. 18.
Incidence of Isoimmunization Among Rh-Negative Pregnant Women in Puerto Rico. Mercedes V. de Torregrosa.—p. 27.
*Total Hysterectomy. E. W. Munnell.—p. 31.
Episiotomy Blood Loss. L. D. Odell and A. Seski.—p. 51.
Fertility in Women: Length of Time Required to Conceive. A. W. Diddle, R. W. Jack and R. L. Pearse.—p. 57.
Role of Nutrition in Pelvic Variation. H. Thomas.—p. 62.
Anesthesia in Obstetrics. J. P. Greenhill.—p. 74.
Management of Ovarian Tumors Complicating Pregnancy. H. C. Falk and I. A. Bunkin.—p. 82.
Sinistroposition: Stigma of Relative Infertility. R. T. Frank.—p. 88.
Causes of Death in Cancer of Cervix Uteri. R. R. DeAlvarez.—p. 91.
*Toxemia of Pregnancy an Allergic Reaction? Hazel A. C. Lin.—p. 97.
Fungicides for Vaginal Moniliasis. H. C. Hesseltine.—p. 102.
Use of Gelatin Foam Sponges in Obstetrics and Gynecology. A. C. Barnes.—p. 105.
Sickle Cell Anemia and Pregnancy. J. H. Hodges and J. B. Bernstine.—p. 108.
Peptic Ulcer with Hemorrhage During Pregnancy and Fetal Death. E. B. LeWinn.—p. 114.
Significance of Decidual Polyps in Otherwise Normal Pregnancies. R. L. Haas.—p. 124.
Endometrial Cyst in an Episiotomy Scar. J. C. Brougher.—p. 127.

Total Hysterectomy.—Munnell says that the chief argument against total hysterectomy as a routine procedure has been that the operative mortality and postoperative morbidity rates are higher with total than with subtotal hysterectomy. In the eleven year period ended May 31, 1946 1,798 hysterectomies were performed in the gynecologic service of Bellevue Hospital. Of this number 1,583 were subtotal hysterectomies and 215 were total hysterectomies. Of these 215, over one half were performed in the last three years of the eleven year period. The mortality rate for total hysterectomy is higher than for subtotal hysterectomy in this series of 215 total hysterectomies. Increased skill from doing more and more total hysterectomies well as proper selection of cases should reduce the mortality in total hysterectomy. Increased mortality is the only valid objection to the procedure, and even this is not a tenable argument when the number of deaths from the possibility of cancer developing in the residual cervical stump are taken into account. The prevention of cancer of the cervical stump is an adequate reason for performing total hysterectomy in benign cases as long as the operation does not introduce an element of extra danger to the patient. As far as postoperative reaction is concerned, patients having had total hysterectomies will run a slightly higher temperature for a longer time. Catheterization is slightly less frequent in total than in subtotal hysterectomy. Postoperative distention is approximately the same in the two groups. The only postoperative complication that can be considered a valid objection is the possibility of injury to the bladder and/or ureters; proper technic should avoid this complication as well as that of prolapse or shortening of the vaginal vault. Sexual response in women following hysterectomy is not significantly different with the cervical stump remaining than with the cervix removed.

Toxemia of Pregnancy as an Allergic Reaction.—Lin says that a condition closely simulating toxemia of pregnancy with albuminuria, hypertension and edema was produced in rats by sensitizing them against placenta protein before they became pregnant. The most important pathologic lesions were found in the arterioles. The walls became greatly thickened and the vascular lumen correspondingly narrowed. There was some thickening of the basement membrane of Bowman's capsules as well as ischemia of the glomerular tufts. This corresponds closely to the early lesions in human toxemia of pregnancy. Wong and Pillot have reported that the earliest sign of toxemia of pregnancy is spasm of the arteriolar wall and the narrowing of its lumen, which can be observed in the eyegrounds. The findings in this preliminary experiment suggest that toxemia of pregnancy might be an allergic reaction of patients to the placental proteins.

American Journal of Ophthalmology, Cincinnati

30:695-842 (June) 1947

Extensive Traumatic Iridodialysis with Repair. F. W. Newell.—p. 695.
Epidemic Retrobulbar Neuritis in the Philippines During the Japanese Occupation. G. de Ocampo, C. V. Yambao, P. J. Mañagas and C. L. Sevilla.—p. 698.
Rate of Dark Adaptation and Regional Threshold Gradient of Dark-Adapted Eye: Physiologic and Clinical Studies. L. L. Sloan.—p. 705.
Influence of General Metabolic and Nutritional Disturbances on Resistance of Cornea. A. Fuchs.—p. 721.
*Scleral Necrosis in Periarteritis Nodosa: Case Report. F. Harbert and S. D. McPherson Jr.—p. 727.
Neuroblastoma of Adrenal with Orbital Metastases: Report of 5 Cases with Autopsy Findings. R. N. Shaffer.—p. 733.
Papilledema and Papillitis. M. Chamlin.—p. 741.
Which Squints Respond Best to Orthoptic Treatment. Edith Roth.—p. 748.
Divergence Excess: Anomaly of Extrapyramidal System. Electra Healy.—p. 753.

Scleral Necrosis in Periarteritis Nodosa.—Harbert and McPherson report that a man aged 31, in whom scleral necrosis was associated with periarteritis nodosa, two years previously had had what was thought to be an allergic reaction to sulfonamides which were given in the treatment of otitis media and abscess of the nasal system. The eye lesion developed some time after a dacryocystectomy with excision of the fistulous tract as a preliminary to rhinoplasty. In the seventh week of the ocular disease it was thought advisable to perform a muscle biopsy to exclude periarteritis nodosa. The findings were consistent with those occurring in periarteritis nodosa. No treatment was of any avail. The patient was discharged from the hospital at his own request fifteen weeks after the onset of the ocular disease. A clinically similar type of ocular lesion has been described as anterior metastatic scleritis. The fundamental pathologic change in periarteritis nodosa is inflammation of the medium and small arteries, with fibrinoid hyaline necrosis and exudative processes. As the necrotizing process subsides in one organ it may involve another. Many etiologic explanations have been suggested, but the one most widely accepted is that it is not a disease entity but a hypersensitivity of the arterial walls. It is most often related to a bacterial allergy, but experimental evidence indicates that drugs, foreign proteins and serums, and even foods or pollens may be responsible. The number of cases has increased since the widespread use of sulfonamides.

American Journal of Physiology, Baltimore*

149:517-754 (June) 1947. Partial Index

Electromyographic Interference in Human Electroencephalogram: Study of Effect of Milk Curarization. D. D. Mark.—p. 538.
Regeneration Rates of Serum Cholinesterase in Normal Individuals and in Patients with Liver Damage. W. C. Wescoe, C. C. Hunt, W. F. Riker and Irene C. Litt.—p. 549.
Influence of Acute Hypothermia on Rate of Oxygen Consumption and Glycogen Content of Liver and on Blood Glucose. F. A. Fuhrman and J. M. Crismon.—p. 552.
*Respiratory and Circulatory Changes During Acclimatization to High Altitude. C. S. Houston and R. L. Riley.—p. 565.
Individual Differences in Respiratory Gas Exchange During Recovery from Moderate Exercise. W. E. Berg.—p. 597.
*Studies on Skin Temperature and Circulation in Decompression Sickness. C. A. Tobias, W. F. Loomis and J. H. Lawrence.—p. 626.
Cardiac Oxygen Metabolism and Control of Coronary Circulation. J. E. Eckenhoff, J. H. Hafkenschiel, C. M. Landmesser and M. Harmel.—p. 634.
Effect of Interference with Respiration on Control of Body Temperature in White Rats and New Zealand Rabbits. A. G. Ware, R. M. Hill and F. H. Schultz.—p. 657.
Sodium, Potassium and Phosphates in Cells and Serum of Blood in Diabetic Acidosis. T. S. Danowski, Pauline M. Hald and J. P. Peters.—p. 667.
Measurement of Volume of Gas in Digestive Tract. H. A. Blair, R. J. Dern and P. L. Bates.—p. 688.
Presence in Blood of Principle Which Elicits a Sustained Pressor Response in Nephrectomized Animals. R. E. Shipley, O. M. Helmer and K. G. Kohlstaedt.—p. 708.
Breath Holding as Test of Physical Endurance. P. V. Karpovich.—p. 720.
Some Characteristics of Gastric Secretion Induced by Mustard Oil Suspension. F. Hollander, Frances U. Lauber and J. Stein.—p. 724.
Role of Mesenteric Circulation in Irreversibility of Hemorrhagic Shock. E. E. Selkurt, R. S. Alexander and Mary B. Patterson.—p. 732.

Acclimatization to High Altitude.—Houston and Riley studied the respiratory and circulatory changes in 4 men exposed to gradually increasing simulated altitude. The data obtained strengthen the concept that acclimatization consists of a series of integrated adaptations which tend to restore the oxygen pressure of the tissues toward normal sea level values despite the lowered oxygen pressure of the atmosphere. The same pulmonary and circulatory changes which caused an increase in oxygen pressure necessarily caused a decrease in carbon dioxide pressure, and an initial effect of the decrease in carbon dioxide pressure was an increase in the alkalinity of the blood. Further changes occurred as acclimatization progressed to counteract this respiratory alkalosis. The fall in blood bicarbonate reflected the extent of these changes, which included a net increase in the other negative ions and probably a net decrease in the positive ions. These changes comprised secondary factors in acclimatization. There was no evidence that cellular metabolism decreased as part of the acclimatization process, since the oxygen consumption remained the same at altitude as at sea level, both during rest and during standard work. Since clinical evidence indicated that the subjects were moderately anoxic, it appears that cellular function was impaired by low oxygen pressure even though the amount of oxygen used by the cells remained normal.

Skin Temperature and Circulation in Decompression Sickness.—Tobias and his associates found that variation in circulation to the extremities is an important factor in the development of decompression sickness. The dorsal skin temperature of the hand of 24 subjects was measured during simulated ascents to 35,000 feet at room temperature. It was found that the mean temperature of subjects that did not develop decompression sickness remained relatively high and constant throughout the test. Those that developed bends pain had significantly lower hand temperatures prior to the onset of pain. The temperature dropped further after the pain appeared. Diathermy applied to the left knee significantly decreased the incidence and severity of symptoms in that knee and resulted in a slight general improvement of performance. Diathermy applied after onset of bends pain had no effect. Heated suits slightly reduced the incidence of severe bends.

Annals of Surgery, Philadelphia

126:1-128 (July) 1947

- *Gastric Neurectomy for Gastric and Duodenal Ulceration. Anatomic and Clinical Study. W. Walters, W. F. Bradley, H. A. Neibling and others.—p. 1.
- Carcinoma of Colon: Effect of Recent Advances on Surgical Management. A. W. Allen, C. E. Welch and G. A. Donaldson.—p. 19.
- *Persistence of Symptoms Following Cholecystectomy. N. A. Womack and R. L. Crider.—p. 31.
- Bezoars Causing Acute Intestinal Obstruction. C. H. Watt and J. W. Harner.—p. 56.
- Surgical Cure of Urinary Incontinence in Women. R. W. Te Linde.—p. 64.
- Gangrene (Noninfective) Complicating Fractures. G. H. Yeager.—p. 98.
- Shoulder and Elbow Lesions Distinctive of Baseball Players. G. E. Bennett.—p. 107.

Gastric Neurectomy for Ulcer.—Walters and his associates of the Mayo Clinic observed in more than 100 necropsies great variation in the distribution of the vagus nerves, which in the present study of their relation to the lower part of the stomach and esophagus they term "gastric nerves." In 92 per cent of the cases the nerves passed through the diaphragm as two distinct trunks. They are readily accessible for resection. The abdominal approach to the gastric nerves allows exploration of the abdominal contents and especially the ulcer, which is removed if it is a gastric ulcer and is suspected of being malignant, and a drainage operation of the stomach being performed if the duodenal ulcer is obstructive or likely to become obstructive. Resections of the vagus have been done at the Mayo Clinic in 66 peptic ulcers. Perforation of a duodenal ulcer and a subdiaphragmatic abscess caused the death of 1 patient fourteen days after gastric neurectomy and gastroenterostomy, and 2 other deaths occurred, 1 from a suspected cerebral embolism on the fourth postoperative day and the other at home from a heart lesion. This patient had had a gastrojejunocolic fistula closed and gastric neurectomy three months previously. In the other cases the immediate results, as evidenced by reduction in gastric acidity, gastric secretion, relief of gastrospasm and relief of pain, were good but not striking. If the good results will persist, resection of the vagus offers an easy and comparatively safe method of treating certain cases of peptic ulcer, especially the recurrent ulcers. Sufficient time must be allowed to pass to determine whether the good results are temporary or lasting and whether untoward results may develop.

Persistence of Symptoms Following Cholecystectomy.—Womack and Crider state that, when stones are present in the gallbladder and when the patient gives a history of typical biliary colic, one can usually anticipate a successful outcome of cholecystectomy. Relief of symptoms of cholecystitis in the stoneless gallbladder was in almost direct proportion to the damage to the gallbladder wall. The greatest relief of symptoms was obtained in patients with the gallbladder wall thickened by virtue of fibrous tissue, edema and cellular infiltration, whereas patients with relatively normal looking gallbladder walls were for the most part not relieved unless stones were present. Womack and Crider point out that the symptoms commonly observed in cholecystitis, such as pain, nausea, vomiting and dyspepsia, can best be explained on the basis of sympathetic and parasympathetic stimulation in the gallbladder region. Accordingly they concern themselves with the nature of the nerve supply to the bile passages and demonstrate pathologic lesions in these nerve pathways in patients with persistent symptoms following cholecystectomy. The presence of scar tissue around nerve trunks lowers the threshold of stimulation of nerve endings and nerve trunks. In order to prevent the postcholecystectomy symptoms, Womack and Crider whenever possible have separated the nerve trunks mesial to the common bile duct. In most instances this is fairly easily done if the peritoneum and underlying areolar tissue are removed from over the common bile duct before the gallbladder is resected. The nerve trunks can then be well visualized and lifted up with a blunt clamp and sectioned. At the same time the common bile duct is cleaned of all surrounding areolar and fibrous tissue. When such treatment of the common bile duct would be fraught with danger, the best treatment has been to strip the cystic duct of all its adjacent structures as well as the cystic artery. In this way none of the nerve fibers are caught in the ligature. A similar procedure is carried out on patients operated on for the so-called postcholecystectomy syndrome.

Archives of Pathology, Chicago

43:541-638 (June) 1947

- Intranuclear Inclusion Bodies in Kidneys of Wild Rats. J. T. Syverton and C. L. Larson.—p. 541.
- Pulmonary Adenomatosis Resembling Jagziekte in the Guinea Pig. R. F. Norris.—p. 553.
- *Structural Changes in Kidneys of Rats with Experimental Chronic Hypertension. Bela Halpert and A. Grollman.—p. 559.
- *Further Effect of the Leukocytosis Promoting Factor of Exudates When Injected in Connection with Inflammation. Valy Menkin.—p. 566.
- Epidermoids (Cholesteatomas) of Brain. Y. M. Bhende and R. G. Dhayagude.—p. 570.
- *Nodular Inflammatory and Degenerative Lesions of Muscles from 450 Autopsies. B. J. Clawson, J. F. Noble and N. H. Lufkin.—p. 579.
- Search for Carcinogenic Substances in Carcinomatous Human Lungs. P. E. Steiner, D. W. Stanger and Miriam N. Bolyard.—p. 590.
- Nonspecific Myocarditis: Analysis of 36 Cases. P. M. Marcuse.—p. 602.
- Simplification of Technic for Demonstrating Alkaline and Acid Phosphatase in Tissues. J. D. Barger.—p. 620.
- Procedure for Demonstrating Lepra Bacilli in Paraffin Sections. P. J. Cambre and M. H. Turner.—p. 624.

Changes in Kidneys of Rats with Hypertension.—Halpert and Grollman report studies on rats in which chronic hypertension had been induced by various methods. Chronic hypertension was produced in 15 rats by damage or elimination of renal parenchyma which reduced the number of available functioning nephrons. Such reduction was initiated when a figure of eight ligature was applied to one or both kidneys or when one kidney was removed without interference with the other. The chronic hypertension thus produced resulted in hypertrophy of the left cardiac ventricle, which paralleled the degree and the duration of the hypertension. These data indicate that neither damage of renal tissue, ischemia nor intrarenal vascular changes are primary prerequisites for the induction of hypertension but that it is the reduction of the total number of functioning nephrons which initiates the disorder. Hypertension once established caused further injury to the remaining nephrons whether one or both kidneys were present. Therefore, chronic hypertension of the rat is a progressive disease the advance of which can be retarded but not abolished.

Factor Promoting Leukocytosis in Inflammation.—Previously there was demonstrated in exudative material the presence of a factor capable of reasonably explaining the leukocytosis frequently accompanying inflammatory processes. This factor when injected into animals not only induces a discharge of immature granulocytes of the bone marrow but produces a hyperplasia or growth of granulocytes and of megakaryocytes in the marrow. Its activity in human beings suggests that the material may have a clinical application. The prognosis of many infectious processes is to a large extent referable to the number of circulating leukocytes. If, therefore, with a given local inflammation the leukocyte level could be raised, a tool would be available to reinforce antibiotics when dealing with some infectious processes. Menkin demonstrates that the leukocytosis promoting factor when injected into the blood stream of an animal with an already existing inflammation raises and maintains for a prolonged interval the number of circulating leukocytes. In such circumstances the leukocytosis is sustained for several days longer than when there is an inflammation alone or when the leukocytosis promoting factor is introduced without a concomitant inflammation. Some observations suggest also that this factor when injected several days prior to an acute inflammation of the pleura likewise tends to maintain a high leukocyte level in the blood for longer intervals.

Nodular Lesions of Muscles.—Clawson and his associates attempted to evaluate the significance of nodular polymyositis and degenerative lesions (atrophy, cytoplastic changes and nuclear variations) in 44 specimens of the deltoid muscle in cases of rheumatoid arthritis and in seven muscles from each of 450 routine necropsies. They conclude that nodular myositis and muscular degenerative lesions (atrophy and sarcoplastic and nuclear changes) are found commonly in rheumatoid and acute rheumatic arthritis and to a lesser extend in an ordinary series of necropsies. There appears to be some correlation between the inflammatory and degenerative lesions, but either may be present alone. The degenerative lesions occur more frequently than the inflammatory lesions. Nodular myositis is more commonly seen in biopsies of deltoid muscles in cases of known rheumatoid arthritis than in postmortem studies of deltoid muscles. The sexes are about equally involved. No particular type of disease except rheumatic fever and rheumatoid arthritis seems to increase the frequency of the inflammatory and degenerative lesions. The lesions are found more frequently in cases in which death occurred in the upper decades of life. It is doubtful whether the lesions can be considered as a specific reaction to the infective agent of either acute rheumatic arthritis or rheumatoid arthritis, but the lesions probably are a part of the rheumatic and the rheumatoid state.

Archives of Surgery, Chicago

54:613-740 (June) 1947

*Traumatic Rupture of the Liver Without Penetrating Wounds: Study of 32 Cases. L. T. Wright, A. Prigot and L. M. Hill Jr.—p. 613.
*Partial Excision of the Motor Cortex in Treatment of Jacksonian Convulsions: Results in 41 Cases. C. Pilcher, W. F. Meacham and T. J. Holbrook.—p. 633.
*Nondrainage and Early Ambulation in Cases of Perforative Appendicitis. A. S. Jackson.—p. 644.
Isolated Paralysis of the Serratus Magnus Following Surgical Procedures: Report of a Case. P. H. Lorhan.—p. 656.
Progress in Orthopedic Surgery for 1945: XV. Fracture Deformities. L. T. Peterson.—p. 660.
Id.: XVI. Conditions Involving the Knee Joint. R. K. Ghormley and others.—p. 668.
Id.: XVIII. Conditions Involving Shoulder, Neck and Jaw. T. Nicola. —p. 689.
Review of Urologic Surgery. A. J. Scholl, F. Hinman, A. B. Hepler and others.—p. 701.

Traumatic Rupture of Liver.—Wright and his associates report 32 cases of traumatic rupture of the liver without penetrating wounds observed at the Harlem Hospital. This lesion is not as rare as the scattered reports in the literature might indicate. The authors present a classification based on the rate of hemorrhage and remark that the abdominal tap is an invaluable aid as a diagnostic procedure. Associated lesions may mask signs and symptoms of ruptured liver. The treatment is surgical. The use of fibrin foam, oxidizable cellulose gauze or "gelfoam," which are the new methods for the control of hemorrhage, are worthy of extensive trial in these cases. Mortality can be reduced by early diagnosis and immediate operation, by free use of blood, plasma or other fluids to counteract hemorrhage and shock, by use of penicillin and sulfonamide compounds to prevent infection and by teamwork between the surgical and nursing staffs to maintain a close watch over the patient.

Partial Excision of Motor Cortex in Jacksonian Convulsions.—During the past ten years Pilcher has performed partial excision of the motor cortex on 41 patients with severe and frequent jacksonian convulsions but without space consuming or gross cicatricial lesions. No microscopic lesion was found in the tissue removed from 14 patients. Gliosis was present in the remainder. There were 2 operative deaths. Gradual return of motor function with little or no disability occurred in all but 4 patients who had moderate or severe hemiparesis. Eight patients were completely relieved of convulsions, 12 have shown pronounced improvement, 9 have been improved to a lesser degree, 8 have shown no improvement and 3 have subsequently died (1 of another cause). It is believed that partial excision of the motor cortex has a real value in selected cases with focal motor convulsions.

Perforative Appendicitis.—Jackson reports 15 cases of perforative appendicitis with peritonitis or abscess formation in which the appendix was removed, sulfathiazole was employed intraperitoneally, the incision was closed without drainage, and spinal anesthesia and early ambulation were practiced. There were no deaths. A secondary intraperitoneal abscess requiring drainage occurred in 1 case. There were no purulent wound infections or other complications. Penicillin was administered in the last 7 cases. A composite study of the opinions of 150 members of the Western Surgical Association on the problems of drainage and chemotherapy in perforative appendicitis is presented. This study shows that 81 members employ and 38 do not employ drainage, 18 rarely use a drain, 9 use drainage only if an abscess is present and 5 drain only to the peritoneal wall. Ninety use a sulfonamide drug intraperitoneally; 60 oppose its use. Only 13 use penicillin intraperitoneally, but 119 use it in other ways; 5 use streptomycin.

Arizona Medicine, Phoenix

4:1-100 (July) 1947

Recent Advances in Hematology. O. O. Meyer.—p. 23.
Treatment of Injuries of the Spinal Cord. J. Martin.—p. 28.
Sex—The Great Taboo: Gynecological Study. A. K. Duncan.—p. 32.
Climate and Rheumatoid Arthritis. S. K. Conner.—p. 37.
Production of Positive Syphilitic Tests Considered as an Enzymic Phenomenon. E. L. Breazeale.—p. 41.
Plea for Earlier Diagnosis of Cancer. N. D. Hall.—p. 45.

Bulletin of Johns Hopkins Hospital, Baltimore

80:217-298 (May) 1947

Idiopathic Low Back Pain and Sciatica Twenty-Five Years Ago and Now. J. A. Key.—p. 217.
Orienting Reflex (Questioning Reaction): Cardiac, Respiratory, Salivary and Motor Components. Janice Robinson and W. H. Gantt.—p. 231.
Neurinomas of Cerebellopontile Recess: Clinical Study of 160 Cases. Including Operative Mortality and End Results. A. G. Revilla. —p. 254.

Connecticut State Medical Journal, Hartford

11:503-594 (July) 1947

Abdominothoracic Approach for High Gastric Neoplasms: Preliminary Report. R. S. Lampson, R. H. Osmond and N. W. Wawro.—p. 503.
Role of Some of New Chemotherapeutic Agents in Surgical Treatment of Hyperthyroidism. R. H. E. Elliott Jr.—p. 508.
*Concentrated Human Plasma Albumin in Treatment of Nephrotic Edema: Report of 4 Cases. O. Roth.—p. 514.
Indications for Extraperitoneal Cesarean Section. H. C. Taylor.—p. 520.
Occupational Medicine and Its Relationship to Present Day Industrial Relations. C. F. Yeager.—p. 524.
Libel Suits of American Medical Association. M. Fishbein.—p. 526.

Plasma Albumin in Nephrotic Edema.—Roth states that plasma albumin infusions increased diuresis in 4 patients with a nephrotic syndrome. The mechanism cannot be entirely explained on colloid osmotic pressure changes, since diuresis took place even when the plasma protein levels were not greatly altered. Plasma albumin in amounts of 200 cc. daily was given for long periods to young patients without production of pulmonary edema or increased red blood cell fragility. Pulmonary edema due to increased plasma volume may occur in older people or in patients with cardiovascular disease. For that reason albumin should not be given at a rate faster than 5 cc. in one minute and under close observation. The lungs should be frequently examined for the appearance of pulmonary edema. Massive injections of plasma albumin failed to restore the normal plasma protein level. Since amigen alone resulted in practically no diuresis and no change in plasma protein level, it is probably of little value. Plasma albumin has the advantage over whole blood transfusions or plasma transfusions in that it rarely produces chills, fever, urticaria or homologous icterus. It contains less salt, and its colloid osmotic pressure is higher. The success of plasma albumin was proved in all 4 cases by causing diuresis and decreasing nephrotic edema. Success seems to be only temporary. The practical value of the treatment, because of its high cost, is its employment in cases which do not respond to other less expensive medications It can be used in emergency cases, such as intercurrent infections, severe ascites and pleural effusion due to nephrosis or chronic glomerulonephritis.

Experimental Medicine and Surgery, Brooklyn

5:97-306 (May-Aug.) 1947. Partial Index

Doubtful Importance of Alkali Loss as Cause of Nephritic Acidosis. A. P. Briggs.—p. 128.
Specific Inhibition of Pancreas and Liver Esterase: Coexistence of Lipase and Esterase in Pancreatic Secretion. P. J. Fodor.—p. 140.
Experimental Studies in Hypercholesterolemic States. G. R. Herrmann. —p. 149.
Extracellular Substances in the Thyroid. R Keller.—p. 163.
Metabolic Effects of Oxidized Suprarenin (Omega, Adenochrome): B. Kisch.—p. 166.
Proteolytic Enzymes of Taka-Diastase N Lichtenstein.—p. 182.
Toxicity of Histidine in Normal and Avitaminotic Rat. G. J. Martin. —p. 191.
Effects of Chronic Doses of Stilbestrol in Female Dogs. R. M. Mulligan. —p. 196.
Experimental Infection of Mice with Shigella Dysenteriae and Modification of Infection by Means of Antitoxic and Antibacterial Serums. L. Olitzki, P. K. Koch and M. Shelubsky —p. 206.
Determination of l-Aspartic Acid and l-Glutamic Acids. Irene S. Roberts.—p. 251.
Relationship Between Maternal and Fetal Blood Cholesterol. A. Sadowsky, A. Brzezinski, Y. M. Bromberg and F. Rosenthal.—p. 259.
Myasthenia Gravis, Humoral Transmission of Nerve Impulses and Thymectomy. A. Schweitzer.—p. 264
Aspects of Physiology of Secretion of Adrenal Cortex, with Bearing on Clinical Medicine. M. Vogt.—p. 279.
New Sensitive Test (Direct Test) for Rh Blocking Antibodies. A. S. Wiener and Jane G. Hurst.—p. 285.
Fibrin Appearance Time: Description of Method. M. J. Weiner and S. Shapiro.—p. 299.

Florida Medical Association Journal, Jacksonville

34:1-58 (July) 1947

The Eye in Thyroid Disease. J. H. Dunnington.—p. 29.
The Doctor and the Public. F. G. Slaughter.—p. 33.
Skin Manifestations Associated with Intestinal Infestations. M. M. Drane.—p. 40.

34:59-118 (Aug.) 1947

Manifestations of Some Internal Diseases in Fundus of Eye. W. J. Knauer.—p. 89.
Osteitis Condensans Ilii: Report of 3 Cases Associated with Urinary Infection. M. C. Szabados.—p. 95.
Chronic Urethritis in Women: Important Clinical Entity. A. J. Butt. —p. 99.

Indiana State Medical Assn. Journal, Indianapolis

40:603-714 (July) 1947

Streptomycin. W. E. Herrell.—p. 627.
*Para-Aminobenzoic Acid Therapy in Rocky Mountain Spotted Fever: Report of a Case. M. M. Best, D. J. Wolfram and J. O. Flora. —p. 631.
Emergency Thoracic Surgery. R. M. Bolman.—p. 634.
Tertiary Syphilis of Larynx: Diagnosis, Pathology and Treatment. J. L. Larmore.—p. 638.
Treatment of Diabetic Coma. S. L. Bryan.—p. 643.
Leiomyoma of Stomach: Case Report. C. O. Almquist.—p. 646.
Blood Substitutes and Blood Transfusion. W. H. Gordon.—p. 650.

Para-Aminobenzoic Acid in Rocky Mountain Fever.—Best and his associates report the history of a woman aged 52 who had Rocky Mountain spotted fever and in whom they obtained satisfactory therapeutic results with para-aminobenzoic acid. On the first day of treatment a test dose of 200 mg. of para-aminobenzoic acid was given orally and was well tolerated. Following this 2 Gm. of enteric coated para-aminobenzoic acid, with 0.5 Gm. of sodium bicarbonate, was given every two hours orally, day and night. A blood level between 10 and 20 mg. per hundred cubic centimeters was maintained. The only toxic effects noted were nausea, mild leukopenia and transient glycosuria. The clinical response was excellent; the rash, headache and mental confusion were eliminated two days after treatment was begun. The temperature remained normal after three days of treatment. The medication with para-aminobenzoic acid was discontinued after seven days.

Industrial Medicine, Chicago

16:331-386 (July) 1947

Custodial Services in Plant Sanitation. Jean S. Felton.—p. 331.
*Hyperinsulinism of Menses. H. E. Billig Jr. and C. A. Spaulding Jr. —p. 336.
Treatment of Fractures of Metatarsals and Phalanges: Preliminary Report. L. R. Byrd Jr.—p. 339.
Pompholyx and Occupational (Contact) Dermatitis. T. Benedek.—p. 344.
Industrial Eye Surgery and Treatment: Mechanical Approach. L. C. Potter.—p. 350.

Hyperinsulinism of Menses.—Billig and Spaulding have observed in women a frequent and striking clinical syndrome consisting of a triad of symptoms: a burst of energy several days before the menses (premenstrual tension), easy bruising and general irritability (lowered threshold to pain). Practically all of them are somewhat irritable and hypersensitive. There is usually a history of recurrent complaints of peripheral radicular pains. Often patients with the syndrome are classified as psychoneurotic. While psychogenic factors may aggravate the condition and produce a vicious cycle in the untreated patient, neurotic manifestations usually clear up under treatment of the hyperinsulinism. The underlying cause for this syndrome appears to be an adrenal cortex deficiency, but it is felt that the ovary also assumes a significant role. Adequate relief from symptoms requires treatment with a carbohydrate free diet and adrenal cortex extract. Vitamin C may also be advisable in some cases. The diet prescribed, while low in carbohydrates, is high in proteins and fats.

Journal of Allergy, St. Louis

18:221-286 (July) 1947

Charcot-Leyden Crystals: Study of Conditions Necessary for Their Formation. M. Samter.—p. 221.
Volumetric Incidence of Atmospheric Allergens: V. Spot Testing in Evaluation of Species. O. C. Durham.—p. 231.
Sensitization Experiments in Guinea Pigs Following Injection with Simian or Rodent Poliomyelitis Virus. C. W. Jungeblut.—p. 239.
Spirometric Evaluation of Benadryl in Asthma. L. Levy and J. H. Seabury.—p. 244.
*Sensitization to Penicillin. J. G. Hopkins and H. Lawrence.—p. 251.
Experimental Research on New Series of Chemical Substances with Powerful Antihistaminic Activity: Thiodiphenylamine Derivatives. B. N. Halpern.—p. 263.
New Method for Quantitative Evaluation of Activity of Antihistaminic Substances and Application to Study of Beta-Dimethylaminoethyl Benzhydryl Ether Hydrochloride (Benadryl). F. B. Traub, U. Friedemann and D. Landstadt.—p. 273.
Immunologic Studies in Patients with Subacute Bacterial Endocarditis Treated by Combined Penicillin Heparin Method: II. Report of Sensitivity to Heparin in Patient. M. Grolnick and L. Loewe.—p. 277.

Sensitization to Penicillin.—Hopkins and Lawrence paid special attention to cutaneous reactions during treatment of superficial infections with penicillin. The occurrence of reactions to treatment in the form of dermatitis in 9 per cent of the 618 patients treated and of positive reactions to patch tests in 13 per cent of the 318 cases tested after treatment shows that penicillin is an excellent sensitizing agent of the epidermis. In patients with eczematized lesions, sensitization was demonstrable in 27 per cent. Sensitization was often localized to limited areas of skin and was frequently transient. No severe generalized and completely disabling eruptions were encountered. Sensitization severe enough to prevent or prohibit systemic treatment with penicillin was encountered in less than 1 per cent of the cases.

Journal of Aviation Medicine, St. Paul

18:217-308 (June) 1947

*Factors Affecting Dark Adaptation. H. W. Rose and Ingeborg Schmidt. —p. 218.
Are Intervertebral Disks Displaced During Positive Acceleration? C. F. Code, M. M. D. Williams, E. J. Baldes and R. K. Ghormley. —p. 231.
Adaptations Which Produce Acclimatization to Oxygen Lack. C. S. Houston.—p. 237.
*Prolonged Hypoxia in Aircraft Passengers: Effects of Flight Around World in Six and One Quarter Days. M. S. White.—p. 244.
Studies on Positive Pressure Respiration: IV. Subjective, Clinical and Psychologic Effects of Continuous Positive Pressure Breathing at High Altitudes. A. L. Barach, M. Eckman, W. L. Bloom and others. —p. 252.
Prevention of Altitude Pain by Preselection. F. M. Henry.—p. 259.
Nasal Resistance Inhaler: New Method for Prevention and Treatment of Aerotitis Media and Aerosinusitis—Preliminary Report. H. J. Sternstein.—p. 266.
Incidence of Decompression Sickness in Individuals Tested in Decompression Chamber Situated at 4,700 Feet. R. W. S. Cheetham.—p. 279.
Oxidase and Aviation: Influence of Atmospheric Decompression on Blood Oxidase and Resistance to Infection. P. Seabra.—p. 289.
Survey of Accidents and Present Difficulties in Jet Planes in Continental U. S. Army Air Forces. L. A. Shepperd.—p. 297.

Factors Affecting Dark Adaptation.—Rose and Schmidt studied the effects of caffeine-metrazol, muscular exercise, strychnine, ultrasonic vibrations, ephedrine, hydrochloride of isoamylamino-6-methyl 2 heptane (octin D), stimulation of taste with saccharin, and vitamin A in oil solution and in an emulsion on the dark adaptation in 15 normal persons. Using the nyktometer and the Engelking-Hartung adaptometer, no deviations were found which exceeded the calculated limits of error. When the results of the carefully made experiments were analyzed critically by the statistical method, none gave convincing evidence that night vision had been improved or impaired. No medications have been found to date which are any more effective than are normal diet and moderate living habits to get the best from night vision. No other methods which have been suggested can be supported by the evidence given.

Prolonged Hypoxia.—White studied the physiologic and psychologic responses of 7 men and 1 woman between the ages of 25 and 49 years who completed a circuit of the world by air in one hundred and forty-nine hours and thirty-eight minutes. One hundred and twenty hours and ten minutes were spent at altitudes principally of 9,000 feet except for periods over the Himalaya and Rocky mountains, when heights of 12,000 to ,000 feet were reached. Oxygen was used during these two periods. Ascents were made at a rate of approximately 900 feet per minute. No significant objective changes resulting from the cumulative hypoxia experienced at 9,000 feet were observed in the tests conducted. Subjectively headaches and fatigue were noted. Adequate sleep in a comfortable position relieved fatigue. It is concluded that normal persons can be exposed as passengers to long flights in modern passenger aircraft, flying at altitudes of 9,000 feet without deleterious results from a cumulative hypoxia. To prevent any ill effects on long flights, it is desirable for transport aircraft to be provided with pressurized cabins and sleeping accommodations for all passengers.

Journal of Bacteriology, Baltimore

53:673-816 (June) 1947. Partial Index

Gene Recombination in Bacterium Escherichia Coli. E. L. Tatum and J. Lederberg.—p. 673.
Two Antibiotics (Lavendulin and Actinorubin) Produced by Actinomyces: I. Isolation and Characteristics of the Organisms. A. Kelner and H. E. Morton.—p. 695.
Action of Pasteurella Pestis Bacteriophage on Strains of Pasteurella, Salmonella and Shigella. A. S. Lazarus and J. B. Gunnison.—p. 705.
Effect of Large Amounts of Nicotinic Acid and Nicotinamide on Bacterial Growth. S. A. Koser and G. J. Kasai.—p. 743.
Chemical Detoxification of Flexner Dysentery Antigen: II. Studies of Accelerated Growth Rates. F. W. Barnes Jr. and Marguerite Dewey. —p. 759.
Two Antibiotics Produced by a Streptomyces. P. C. Trussel, C. O. Fulton and G. A. Grant.—p. 769.
Bacteriophage Under the Ordinary Microscope. A. W. Hofer.—p. 781.
Glycerite of Hydrogen Peroxide: I. Comparison of Its Bacteriotoxic Action with That of Mercurial Solutions. E. A. Brown, W. Krabek and R. Skiffington.—p. 793.

Journal of Clinical Endrocrinology, Springfield, Ill.

7:307-384 (May) 1947

*Polyostotic Fibrous Dysplasia: Defense of the Entity. F. Albright. —p. 307.
Activity of Arginase in Red Blood Cells. Genevieve C. Covolo and R. West.—p. 325.
Excretion of 11-Oxycorticosteroid-like Substances by Normal and Abnormal Subjects. N. B. Talbot, F. Albright, Annette H. Saltzman, Aniela Zygmuntowicz and R. Wixom.—p. 331.
Pregnandiol Precipitation Test: Clinical Application of Rapid Method for Diagnosis of Pregnancy. H. C. Mack and A. E. Parks.—p. 351.
Metabolism of Single Therapeutic Doses of Natural Estrogens in Human Subjects. B. F. Stimmel.—p. 364.

Polyostotic Fibrous Dysplasia.—Albright describes a syndrome which in its complete form is characterized by a disseminated osteitis fibrosa (both hyperostotic and hypoostotic) with a segmental distribution, areas of cutaneous pigmentation which have a distribution suggesting some connection between them and the bone lesions, and sexual and somatic precocity when the condition occurs in the female. He believes this syndrome is not a form of lipoid granulomatosis (xanthomatosis) because the blood cholesterol level is not abnormal, the bone lesions show only a slight tendency to progress, clear up spontaneously, and are not radiosensitive. The segmental distribution of the bone and skin lesions is not suggestive of a metabolic disorder. The x-rays show increased bone formation as well as bone destruction; the areas of cutaneous pigmentation are not characteristic of lipoid granulomatosis. The serum phosphatase level is high when the disease is widespread and sexual precocity in females is not a feature of lipoid granulomatosis. Albright believes this syndrome is not a form of neurofibromatosis (von Recklinghausen) because he has never seen a case in which multiple cutaneous fibromas and widespread bone disease with evidence of increased as well as decreased bone formation were present in the same person; the syndrome does not tend to run in families; sexual precocity in females is not characteristic of neurofibromatosis. A necropsy by Dr. H. Edward MacMahon on a patient with the syndrome showed as a possible cause of the precocity not a tumor but a lesion in one mamillary body. Elephantiasis, so common in neurofibromatosis, has not been found in this syndrome. The condition had best be termed "polyostotic fibrous dysplasia," as suggested by Lichtenstein.

7:385-474 (June) 1947

*Syndrome of Rudimentary Ovaries with Estrogenic Insufficiency and Increase in Gonadotropins. E. B. del Castillo, F. A. de la Balze and J. Argonz.—p. 385.
*Treatment of Carcinoma of Human Breasts with Testosterone Propionate: Report of 5 Cases. H. Schwander and H. N. Marvin.—p. 423.
Symmetrical Cerebral Calcification Which Followed Postoperative Parathyroid Insufficiency: Report of Case. I. S. Siglin, L. M. Eaton, J. D. Camp and S. F. Haines.—p. 433.
Feminizing Tumor of Testis: Presumably Aberrant Adrenocortical Tumor. E. Östergaard.—p. 438.

Syndrome of Rudimentary Ovaries.—Del Castillo and his associates of the Hospital Rivadavia in Buenos Aires say that two groups of American investigators, Varney and his collaborators and Albright and his co-workers, established the clinical and hormonal characteristics of a new syndrome based mainly on the application of certain biologic tests. The former authors called it "association of short stature, retarded sexual development and high urinary gonadotropin titers in women," the latter "a syndrome characterized by primary ovarian insufficiency and decreased stature." More cases with ovarian biopsies were presented by Wilkins and Fleischmann. These investigators called this condition "ovarian agenesis." Del Castillo and his co-workers report observations on 8 patients who presented the syndrome designated as rudimentary ovary with estrogenic insufficiency and increase in gonadotropins. The presence of rudimentary ovaries was demonstrated in 6 of these patients by microscopic studies of tissues removed during surgical exploration. With 1 exception all showed retardation of growth. Inadequate development of the sexual characteristics indicated estrogenic insufficiency, and the urinary gonadotropin titers were above normal in all these patients. In the cases in which rudimentary ovaries are associated with diminution in growth, differentiation from hypophysial dwarfism is especially difficult, but among differentiating characteristics they emphasize the presence of pubic and axillary hair and the increase in follicle stimulating hormone in the urine in those with rudimentary ovaries, whereas hypophysial dwarfism is characterized by lack of pubic and axillary hair and lack of follicle stimulating hormone.

Testosterone Propionate in Carcinoma of Breast.—Schwander and Marvin report observations on 5 women with carcinoma of the breast and metastases to the soft tissue and skeleton who were treated with testosterone propionate. Symptomatic relief of pain and increased sense of well being were pronounced following this treatment. Moderate doses of testosterone propionate have no beneficial effect on the primary tumor or soft tissue metastases. The results suggest that recalcification of osteolytic metastases occurs with adequate treatment. No serious side reactions were noticed with this method of treatment.

Journal of Infectious Diseases, Chicago

80:223-320 (May-June) 1947. **Partial Index**

The Chesson Strain of Plasmodium Vivax Malaria. C. M. Whorton, W. R. Kirschbaum, T. N. Pullman and others.—p. 223.
Effects of Protein Depletion and Subsequent Immunization on Response of Animals to Pneumococcal Infection. R. W. Wissler.—p. 250.
Cytologic Study of Toxoplasma, with Special Reference to its Effect on Host's Cell. Joy B. Cross.—p. 278.
Studies on Immunologic Relationships of Psittacosis-Lymphogranuloma Venereum Group of Viruses. Elizabeth St John and F. B. Gordon.—p. 297.
Pathologic Changes in Natural and Experimental Filariasis in Cotton Rat. D. R. A. Wharton.—p. 307.

Journal of Neurophysiology, Springfield, Ill.

10:251-320 (July) 1947. **Partial Index**

Electrical Investigation of Monosynaptic Pathway Through Spinal Cord. C. McC. Brooks and *J. C. Eccles*.—p. 251
Cerebral Regulation of Motor Coordination in Monkeys Following Multiple Transection of Sensorimotor Cortex. *R.* W. Sperry.—p. 275.
Single Fiber Analysis of Inhibition and Polarity of Retinal Elements. B. Gernandt and R. Granit.—p. 295.
Projection of Frontal Lobe on Hypothalamus. A. A. Ward Jr. and W. S. McCulloch.—p. 309.
Respiratory Effects from Stimulation of Afferent Vagus Nerve in Monkey. O. A. M. Wyss.—p. 315.

Journal of Pediatrics, St. Louis

31:1-130 (July) 1947

*Rocky Mountain Spotted Fever: Preliminary Report on Use of Para-Aminobenzoic Acid. C. J. Tichenor, S. Ross and P. A. McLendon.—p. 1.
*Effect of Trimethyloxazolidine Dione (Tridione) on Blood. J. P. Davis and W. G. Lennox.—p. 24.
Psychologic Considerations in Group of Children with Poliomyelitis. Edith Meyer.—p. 34.
Note on Experiences with Rooming-In Arrangement for Newborn Infants in Small Hospital. H. L. Barnett.—p. 49.
*Blalock-Taussig Operation. G. W. Salmon and H. T. Barkley.—p. 54.
*Homologous Serum Hepatitis Following Transfusion in Infant. H. B. Bruyn.—p. 60.

Rocky Mountain Spotted Fever.—Tichenor and his co-workers report the occurrence of Rocky Mountain spotted fever in 36 patients between the ages of 15 months and 13 years who were admitted to the Children's Hospital in Washington, D. C., between 1931 and 1946. Six of these patients were treated with para-aminobenzoic acid. Also 2 additional adults with the disease were treated with this drug. Powdered para-aminobenzoic acid was partially dissolved in 5 per cent sodium bicarbonate solution so that 15 cc. of the mixture contained 1 Gm. of the acid. This lessened the gastric irritation so that the drug was well tolerated. The degree of toxicity, duration of the disease and morbidity were favorably modified when compared with 30 patients not so treated. The mortality rate in the untreated group was 10 per cent, while there were no deaths in the 8 patients treated with para-aminobenzoic acid. Administration of 0.33 Gm. of para-aminobenzoic acid per pound of body weight in twenty-four hours in a three hour divided dosage schedule over a period of four days to 6 normal children in a preliminary control experiment suggested that para-aminobenzoic acid blood levels ranging between 15 and 36 per cent could be maintained with this dose. Daily prothrombin time determinations and cephalin flocculation tests showed changes suggestive of transient liver dysfunction. The carbon dioxide combining power was moderately reduced temporarily by the drug.

Effect of Tridione on Blood.—Davis and Lennox examined periodically the blood of 127 patients taking trimethyloxazolidine dione (tridione). The ages of the patients ranged from 8 months to 50 years. The only significant changes were a tendency to neutropenia or eosinophilia and a slight increase in lymphocytes. Definite neutropenia was present in 6.3 per cent of patients and borderline values in 7 per cent. In the remaining 87 per cent the number of neutrophils remained within normal limits. Repeated examinations indicate that the neutropenia is a gradual reaction. Monthly testing would seem sufficient to prevent the development of serious neutropenia. Tridione is a potent therapeutic agent and possible effect on the blood or on the bone marrow should not prevent its proper use. It should be used only when specifically indicated and under medical supervision. It should not be prescribed for patients with a history of blood dyscrasia and only cautiously for those with a history of idiosyncrasy to drugs. The blood should be examined monthly; patients with total neutrophil counts below 2,500 should be checked more frequently; if the neutrophil count goes below 1,600, treatment should be withheld.

Blalock-Taussig Operation.—The essential procedure of the Blalock-Taussig operation is the construction of an "artificial" ductus arteriosus. Salmon and Barkley performed the anastomosis in 8 of 10 patients between the ages of 3 and 11 years, in whom the chest was explored. Six of these were remarkably improved and are enjoying activity approaching that of a normal child. None have experienced a recurrence of the syncopal attacks, which were common before the operation. The average arterial oxygen saturation before operation was 56.4 per cent, after operation 80.1 per cent. The cyanosis of the lip improved either at the time of operation or in the immediate postoperative period. The cyanosis of the nail beds may require several days to improve. Since operation there has been a slight increase in heart size in some instances and little change in others. One of the 8 patients was neither improved nor apparently harmed; his preoperative pulmonary artery pressure was 340 mm. of water. One died twenty-four hours after the operation; the actual cause of death was not determined. One of 2 patients in whom anastomosis was not performed was discharged unharmed by the exploration, while the second suffered widespread central nervous system damage and died twenty-seven days later.

Homologous Serum Hepatitis Following Transfusion.—Bruyn reports the clinical and pathologic observations of an infant that died of homologous serum hepatitis when 15 weeks of age. This is believed to be the first report of such a case in this age group. Transmission apparently occurred through the medium of transfusions of whole blood given by 3 volunteer donors sixty to one hundred days before onset of the disease. None of them had ever had jaundice, nor had any of them been exposed to a known case of infectious hepatitis. Their histories were negative for virus pneumonia and infectious mononucleosis. These 3 donors represent an example of the unavoidable hazard in the problem of homologous serum hepatitis, i. e. the donor in whom the history is of no support in detecting the presence of hepatitis.

Maine Medical Association Journal, Portland

38:119-160 (June) 1947

Review of Recent Progress in Otorhinolaryngology. M. N. Flanders.—p. 119.
Is There a Specialist in the House? W. B. S. Thomas.—p. 124.
Benadryl Hydrochloride and Its Possible Application in Management of Peptic Ulcers, with Case Report. G. Geyerhahn.—p. 128.

38:161-186 (July) 1947

Recent Advances in Pediatrics. E. T. Wyman.—p. 161.
Prevention of Coronary Disease. L. H. Berrie.—p. 165.
Simple Tests for Sugar and Acetone in Urine. M. Bacon.—p. 167.

Medical Annals of District of Columbia, Washington

16:287-354 (June) 1947

Research and Total Health. T. Parran.—p. 287.
Headache: Mechanisms, Differential Diagnosis and Treatment. P. Chodoff and L. S. Blumenthal.—p. 295.
Recent Advances in Obstetrics and Gynecology. J. Parks.—p. 304.
The Place of the Tumor Specialist. C. T. Klopp.—p. 314.

Michigan State Medical Society Journal, Lansing

46:609-728 (June) 1947

Anesthesia in General Practice. J. DePree.—p. 661.
Treatment of Urinary Tract Infections. R. M. Nesbit and S. I. Glickman.—p. 664.
Minimal Tuberculosis. J. W. Towey.—p. 668.
Application of Psychiatry to General Practice of Medicine. J. M. Dorsey.—p. 671.
Clinical Aspects of Physical Medicine. A. E. White.—p. 77.
Early Recognition of Carcinoma of the Colon and Rectum. L. J. Hirschman.—p. 681.
Policy of Excess. R. W. Teed.—p. 682.

Military Surgeon, Washington, D. C.

100:463-564 (June) 1947

Buzz-Bomb Assaults on London. J. R. Darnall.—p. 463.
Use of Continuous Caudal and Continuous Spinal Analgesia in Diagnosis, Prognosis and Rehabilitation of Peripheral Vascular Diseases of Lower Extremities. R. A. Hingson and J. L. Southworth.—p. 474.
Aviation Ophthalmology. B. F. Payne.—p. 488.
Organization and Administration of the Dental Service at Large Naval Training Station. W. Rehraurer.—p. 498.
Prosthesis for Cleft Palate in the Newborn. B. A. Rakow, P. G. Ebner and S. R. Ombres.—p. 503.
Observations on War Wounds, with Particular Reference to "Stormy Fermentation." H. Gershberg.—p. 505.
Wound Bacteriology in the Philippines. R. E. Feeney.—p. 514.

New England Journal of Medicine, Boston

237:1-38 (July 3) 1947

*Cancer of the Rectum: Analysis of Cases Occurring in Connecticut During 1935-1945. E. J. Ottenheimer.—p. 1.
*Infectious Hepatitis with Subacute Atrophy of Liver: Epidemic in Women After the Menopause. M. Jersild.—p. 8.
Solitary Unicameral Cyst of the Os Calcis. C. C. Verstandig.—p. 21.
Tuberculosis. J. D. Wassersug.—p. 22.
Benign Peptic Ulcer.—p. 29.
Healed Endocarditis of Mitral and Tricuspid Valves and Ventricular Endocardium.—p. 32.

Cancer of Rectum.—This study is concerned with all cases in which a diagnosis of cancer of the rectum was made in the eleven year period from 1935 to 1945 inclusive. The patients were treated by many surgeons in both large and small hospitals. Complete follow-up data were obtained in over 97 per cent of cases. In the eleven year period 1,610 patients were admitted to hospitals with the diagnosis of cancer of the rectum. Information has been submitted to indicate the value of collecting cancer statistics on a statewide basis. Efforts must be made to reduce the time lag between the first symptom and definitive treatment. The signs and symptoms of cancer of the rectum are sufficiently striking to warrant early recognition. Biopsy should be performed for accurate appraisal. Operability and mortality rates are improving owing perhaps to the use of antibiotics in the prevention and treatment of sepsis, a better understanding of the management of shock and phlebitis and the more widespread employment of trained physician-anesthetists. Further improvement might be possible if some plan could be adopted of concentrating the care of these cases in a few centers. For the six year period 1935-1940 five year cures were obtained in only 7.9 per cent of all cases. A uniform method of reporting end results is highly desirable.

Infectious Hepatitis with Atrophy of Liver.—Jersild states that an unusual epidemic of infectious hepatitis has been present in Denmark since 1944. It differs from epidemics previously described in that the course has been extremely malignant. In a single department of a hospital 123 patients were treated for the disease. It is characterized by a protracted course (over three months) and by the occurrence of ascites and edema. Over 99 per cent of the patients were women. The mortality was 61 per cent. The disease chiefly affected women after the menopause, 79 per cent of patients being over 50 years of age. It is often characterized by a long preicteric phase—more than four weeks in 64 per cent—in contrast to acute infectious hepatitis, in which the preicteric phase in 92 per cent of patients was less than two weeks. The average duration of the disease in the fatal cases was nine months. The possibility of a special malignant virus is considered and the question is raised whether estrogens exert some form of liver-protecting influence against this infection.

New York State Journal of Medicine, New York

47:1439-1534 (July 1) 1947

*Carcinoma and Hodgkin's Disease. J. Skapier and A. B. Friedman.—p. 1483.
The Neglected Prostate Gland. F. Coonley.—p. 1486.
Management of Infertility Associated with Oligospermia. J. Clahr, M. L. Hammerschlag and I. Smiley.—p. 1489.
*Tridione Therapy in Institutionalized Epileptic Patients. E. Davidoff.—p. 1492.
Treatment of Lightning and Girdle Pains in Tabes Dorsalis with Niacin. L. Pelner.—p. 1496.
Simplified Technic of Treating Sinusitis with Penicillin Aerosol, with Description of Foot Pump for Economic Nebulization of Penicillin and Other Therapeutic Aerosols. A. L. Barach, C. C. Rumgey Jr., M. Soroka and Dora Rader.—p. 1498.
Cooperation Between Patient and Physician: Essence of Good Medical Care, Individual or Collective. H. Emerson.—p. 1501.

Carcinoma and Hodgkin's Disease.—Skapier and Friedman observed 2 cases of Hodgkin's disease associated with mammary cancer. This concurrence is extremely rare, but there is no evidence that Hodgkin's disease has an anticarcinogenetic effect or vice versa in human beings. The rarity of the coexistence of the two diseases may be explained by the age incidence, by the duration and by the nature of Hodgkin's disease.

Tridione Therapy of Epileptic Patients.—Davidoff reports the results obtained with tridione in treating 42 epileptic patients at Craig Colony. About 50 per cent of the patients responded better to tridione than they did to previous drugs such as phenobarbital and/or diphenylhydantoin sodium. Tridione appears to be more effective in cerebral palsies or symptomatic epilepsies, particularly of children with milder types of organic impairment or milder seizures and when the manifestations are of more recent origin. It was of some value in about half the patients with psychomotor attacks and petit mal stupors; it appears to be of least value in grand mal seizures and long-standing myoclonias. Children and the milder cases responded better in all groups. Some of the favorable effects of tridione are counterbalanced by untoward reactions. It produces toxic reactions which necessitate careful observation of the patient preferably in a clinic or institutional regimen. Until the effects of tridione are better understood and its action more carefully established, tridione should be administered with considerable caution. Fewer toxic effects were noted in children.

North Carolina Medical Journal, Winston-Salem

8:331-386 (June) 1947

President's Address. W. M. Copridge.—p. 331.
Clinical and Physiologic Problems in Cases of Portal Cirrhosis. A. M. Snell.—p. 338.
Peritendinitis of Extensor Pollicis Brevis and Abductor Pollicis Longus Tendons—De Quervain's Disease. L. D. Baker and N. M. Shutkin.—p. 346.
Present Trends in Treatment of Syphilis. D. G. Welton.—p. 348.
Health Education Experience in Rutherford-Polk Area. B. E. Washburn.—p. 354.
Bromide Intoxication. J. R. Bender.—p. 357.
Personal History of Pulmonary Tuberculosis in Life Insurance Medical Appraisal. V. S. Caviness.—p. 360.
Some Allergic Manifestations of the Eye. W. P. Speas.—p. 364.

8:387-438 (July) 1947

Carcinoma of Colon. R. L. Sanders.—p. 387.
Streptomycin in Tularemic Pneumonia: 2 Case Reports. A. J. Draper.—p. 392.
Evaluation of Use of Antibiotics in Dermatologic Diseases. P. G. Reque—p. 397.
Congenital Anomalies of Spine and Backache. F. M. Dula.—p. 401.
*Milk Sickness. J. T. Doyle.—p. 404.
Diphtheritic Myocarditis: Case Report. W. M. Kelsey.—p. 410.

Milk Sickness.—According to Doyle, milk sickness is an intoxication in human subjects caused by ingestion of milk and milk products of cows which have eaten white snakeroot (Eupatorium urticaefolium) or rayless goldenrod (Aplopappus heterophyllus). The primary intoxication in the animals is known as "trembles" or "split tail." Since Hardin's report in 1934, 21 additional cases of milk sickness have been seen in the author's region. Between 1941 and 1946 only 1 patient with acute milk sickness was seen, but in the past year 3 cases, including 1 fatal case, were seen. The disease is characterized by anorexia, weakness, fatigability, constipation, nausea and pernicious vomiting in acute, relapsing and probably chronic forms. The acute phase is characterized by profound dehydration and acidosis, and a fatal termination is common. Fever-

and leukocytosis do not occur. The toxic principle contained in white snakeroot and rayless goldenrod is a secondary alcohol called tremetol. Its mode of action is unknown. Treatment should be directed toward the correction of the dehydration and acidosis. Empirically the use of intoxicating doses of alcohol apparently improves the prognosis. Convalescence is prolonged, and relapse may follow premature physical exertion.

Northwest Medicine, Seattle

46:597-572 (July) 1947

Measurement of Hemorrhage. D. M. Green.—p. 517.

Unusual Findings in the Ileocecal, Appendical Region. R. R. DeNicola.—p. 519.

Perforation of Jejunum Due to Minor and Obscure Trauma, with Postoperative Escherichia Coli Peritonitis and Wound Infections Treated with Sulfathiazole and Streptomycin J. D. Mortensen.—p. 523.

*Acute Bacterial Endocarditis; Penicillin Resistant Streptococcus Hemolyticus. S. T. Scudder and R. Deputy p. 529.

Gangrene in Diabetes Mellitus. J. H. Crampton, J. W. Miller and L. D. Fey.—p. 531.

Recurrent Tubal Pregnancy. A. F. Lee p. 535.

Penicillin Resistant Streptococcus in Bacterial Endocarditis.—Scudder and Deputy's patient was a man aged 52 who twelve days before admission to their hospital in Seattle had developed an influenza-like disorder. At the time he first became ill he had been hospitalized in North Carolina and had been given 300,000 units of penicillin in twenty-four hours. After that his temperature became normal and he left the hospital contrary to the advice of his physician. At the end of a week he again developed chills and fever and was given 14 Gm. of sulfadiazine. After a three day remission he had another recurrence of chills and fever and was given another 200,000 units of penicillin. On the day prior to admission to the author's hospital he was given 300,000 units of penicillin in beeswax on account of a similar recurrence. On the day of admission to their hospital the blood cultures were sterile, but three subsequent cultures on three successive days showed profuse growth of B hemolytic streptococci. The temperature rose to 105.5 F. Penicillin in doses of 150,000 units every three hours was started again, but after three days of this treatment the status was about the same and chills and fever persisted. The patient was then placed on a regimen of continuous intravenous penicillin, 10 million units being given daily in 4 liters of fluid. He was given sulfadiazine in doses to obtain a blood level of 16 mg. per cubic centimeter. He was also given 15 Gm. of sodium bicarbonate daily. This treatment was given for seven days and then all treatment was discontinued, since the patient had been free from fever since the third day of the massive treatment. In all, the patient had received about 70 million units of penicillin. He was discharged on the twenty-eighth day and was apparently in good health six months later. The authors urge that bacterial sensitivity tests be repeated, because tolerance to penicillin may increase, and the determination of adequate doses of penicillin should be based on the sensitivity tests.

Ohio State Medical Journal, Columbus

43:721-792 (July) 1947

*Studies in Hodgkin's Syndrome: VI. Clinical and Etiologic Studies. H. A. Hoster, J. W. Riddle, Margaret D. Heise and others.—p. 721.

Clinical Interpretation of Jaundice. R. G. Lehman.—p. 725.

Recurrent Headache and Some Neurogenic Equivalents. F. J. Kern.—p. 730.

Streptomycin: Clinical Results in 37 Cases R. F. Parker, Betty Gilson and J. J. Joelson.—p. 734.

Survey of Brucellosis in a Rural Ohio County. H. Wain.—p. 736.

Oral Therapy in Management of Threatened Abortion. Wynne M. Silbernagel.—p. 739.

Fenestration Operation in Treatment of Deafness. H. E. Harris.—p. 741.

Subarachnoid Hemorrhage Complicating Hemorrhagic Nephritis. G. W. Pedigo Jr. and D. E. Nolan.—p. 743.

Decortication of the Human Lung. E. Maurer.—p. 744

Clinical and Etiologic Studies in Hodgkin's Syndrome.—Hoster and his associates say that Hodgkin's syndrome continues to present the challenge of a disease entity occupying a position midway between the infectious granulomas of known etiology and the so-called true cancers of unknown cause. They review clinical and etiologic observations made in approximately 100 cases studied during the last four years. In support of the postulate that Hodgkin's disease may belong in the category of tumor-virus diseases, the following characteristics are cited: 1. The cellular lesion found in fixed tissue preparations of the pleomorphic or granulomatous type of Hodgkin's disease is not suggestive of neoplastic disease but of an infectious process. 2. The occasional spontaneous and complete disappearance of large lymph nodes without treatment, associated with the peculiar relapsing type of fever, tachycardia, pain and changes in hematologic equilibriums are suggestive of a chronic infectious process. There are no neoplastic diseases in which so many apparently dissimilar histologic variations, united only by the presence of small numbers of one type of cell (the Hodgkin cell) are classified under one name and for which there are a coexistent number of diverse clinical syndromes and organic manifestations. The behavior of explants of Hodgkin's tissue in tissue culture is grossly unlike that of tumor tissue in general: inclusion bodies, giant cell formation and cytostimulation are prominent. A similar cytopathologic reaction can be produced in certain normal cells in tissue culture inoculated with cell free Hodgkin's material. The authors also call attention to the clinical and histopathologic points of similarity between Hodgkin's disease in man and a tumor virus syndrome in chickens known as lymphomatosis, and a recently described, rare disease of unknown etiology designated as Hodgkin's disease of swine.

Oklahoma State Medical Assn. Jour., Oklahoma City

40:217-274 (June) 1947

Current Concepts of Etiology and Pathogenesis of Periarteritis Nodosa. E. R. Denny.—p. 220.

Diabetes and Arteriosclerosis. H. C. Hopps.—p. 226.

Sickle Cell Anemia: Report of Case with Mural Thrombi in Heart. C. D. Tool and R. U. Northrip.—p. 231.

40:275-324 (July) 1947

Five Hundred and Fifty-Seven Case Histories of Cervical Disease, 1944-1945. K. J. Wilson and C. H. Wilson.—p. 277.

Incidence of Intestinal Parasites in Southeastern Oklahoma. O. R. Gregg and Mary Jane McClintock.—p. 282.

Treatment of Parasitic Infections Common in Oklahoma. D. B. McMullen.—p. 284.

Convulsions in Infancy. H. J. Rubin.—p. 286.

Pennsylvania Medical Journal, Harrisburg

50:905-1016 (June) 1947

Recent Problems in Evaluation of Male Fertility. G. A. Humphreys.—p. 929.

Abuse of Pelvic Surgery in the Female. N. F. Miller.—p. 939.

Seeking Success in Public Relations. L. H. Perry.—p. 945.

Chronic Traumatic Osteomyelitis and Chronic Infected Wounds: Plastic Procedures in Treatment. A. Behrend.—p. 954.

50:1017-1028 (July) 1947

Hematologic Reactions to Some Modern Therapeutic Measures.— P. Reznikoff.—p. 1041.

The Middle Aged Child. B. M. Spock.—p. 1045.

*Pernicious Anemia: Untoward Therapeutic Effects of Thiamine or Niacin. G. E. Farrar Jr.—p. 1053.

*Sedimentation Rate in Myocardial Infarction. A. Koenig and E. W. Young.—p. 1060.

Experience with Extraperitoneal Cesarean Section. C. C. Briscoe.—p. 1065.

Management of Breast Tumors. R. W. Teahan.—p. 1069.

Avulsion Fracture of Tuberosity of Ischium. V. Mooney.—p. 1072.

Priapism. F. G. Harrison.—p. 1074.

Untoward Effects of Thiamine or Niacin in Pernicious Anemia.—Farrar says that the similarities in the clinical features of pernicious anemia, pellagra, sprue and beriberi sometimes present difficulties in differential diagnosis. The demonstration of the therapeutic effect of folic acid in pernicious anemia, nutritional macrocytic anemia and sprue has added to the understanding of this relationship. In an effort to clarify this relationship, patients with the pernicious anemia symptom complex were treated with single factors of the vitamin B complex. Six cases are reported. It was found that when thiamine alone was administered to inadequately nourished patients with the pernicious anemia symptom complex glossitis became aggravated and diarrhea and pellagrous dermatitis developed. The erythrocyte count rose to normal levels in eight to twelve weeks without other treatment. Transient aggravation of peripheral neuropathy was observed following injections of thiamine. The manifestations of ariboflavinosis were observed when large doses of thiamine were combined with adequate doses of liver extract. The diet of these patients was persistently restricted by their "county relief" incomes, and it was high in carbohydrate. With a relatively adequate diet this pellagrous effect of thiamine was not encountered, and no rise in the blood hemoglobin or erythrocyte count occurred. Subsequently niacin was administered without other treatment to patients whose symptoms had been relieved and whose blood counts had been satisfactorily maintained with parenteral liver therapy. A drop in the red cell count occurred in four to eight weeks, with a recurrence of the symptoms of pernicious anemia. Relapse was much slower when liver therapy was omitted without the administration of niacin.

Sedimentation Rate in Myocardial Infarction.—Coronary occlusion with myocardial infarction has been recognized for some time as a cause for acceleration of the erythrocyte sedimentation rate. Koenig and Young investigated the sedimentation rate of 21 patients and report the histories of 6 of them. The cases illustrate the course of sedimentation curves taken at frequent intervals in cases of acute myocardial infarction of variable degrees. It appears that acceleration of sedimentation begins in the first hours after the thrombotic lesion occurs. While the acceleration may not be recognizable from a single observation, a series of daily curves for the first few days will readily demonstrate the presence of an acute catabolic process. The time for beginning of sedimentation is a valuable criterion of the activity of the process. The most rapid phase appears four or five days after the acute attack and is characterized not only by a fall of 20 or 25 mm. in an hour but by beginning of sedimentation in the second or even the first five minute period. A curve of equal depth which does not begin to fall until the third or fourth five minutes indicates either the preliminary acute phase or the beginning of improvement. Two of the cases indicate that definite acceleration may persist for periods of two to six months after the acute attack. It would seem reasonable to make beginning improvement in the sedimentation curve a prerequisite for allowing the patient to leave his bed. In such cases the potential dangers of too early activity outweigh those of peripheral phlebothrombosis.

Philippine Medical Association Journal, Manila

23:39-88 (Feb.) 1947

Cranial Metastases from Thyroid Malignancy. P. M. Recio.—p. 39.
Acute Epiglottitis. C. V. Yambao.—p. 47.
Syphilis in Children in the Philippines—Its Incidence and Treatment. A. V. Tupas and J. O. Chan.—p. 51.
Newgrowths of Digestive Tract. C. D. Franco and P. M. Recio.—p. 57.
Biologic Assay for Thiamine of Three Varieties of Rice Grown in the Philippines. P. I. de Jesus, S. G. Jao and M. Gutierrez.—p. 65.
Bromsulphalein Test in Liver Dysfunctions. M M. Alimurung and E Medina Cue.—p. 73.

Psychiatric Quarterly, Utica, N. Y.

21:171-346 (April) 1947

Telepathy in Analysis: Discussion of Five Dreams. N. Fodor.—p. 171.
Management of Chronic Alcoholism E. Y. Williams.—p. 190.
Thoughts on Life and Death or Vidonian All Souls' Eve. A. A. Brill. —p. 199.
Study of First Admissions with General Paresis to Hospitals for Mental Disease in New York State, Year Ended March 31, 1945. B Malzberg.—p. 213.
Syndrome of Inhibition. S. Tarachow.—p. 233.
The Jew as a Symbol: II. Anti-Semitism and Transference. H. Loeblowitz-Lennard.—p. 252.
Behavioral Changes Produced in Patients Suffering from Chronic Tensional Anxiety States by Long Continued Adrenalin Administration. D. E. Cameron.—p. 261.
Problems of Identification. H. H. Hart.—p. 275.
Stereotypy in Schizophrenia: Case Report. H. J. Myers.—p. 294.
Cerebral Arteriosclerosis in the Paranoid State: Preliminary Report. H. S. Alpert, J. T. Bigelow and L. L. Bryan.—p. 305.

Public Health Reports, Washington, D. C.

62:933-968 (June 27) 1947

Studies in Deratization of Surface Vessels by Means of 1080 (Sodium Fluoroacetate). J. H. Hughes.—p. 933.
Yellow Fever Vaccine Inactivation Studies. H. W. Burruss and M. V. Hargett.—p. 940.

62:969-1008 (July 4) 1947

Operation of Urban Sheltered Workshop for the Tuberculous. R. L. McNamara and Agnes W. Brewster.—p. 971.
Passive Transfer of Tuberculin Sensitivity in Guinea Pig. M. M. Cummings, Martha Hoyt and R. Y. Gottshall.—p. 994.

62:1009-1040 (July 11) 1947

"Albumin-Bacterioplasma Conjugates," with Special Reference to Etiology of Rheumatic Fever: Preliminary Report. M. P. Schultz and Edythe J. Rose.—p. 1009.

Review of Gastroenterology, New York

14:457-521 (July) 1947

*Action of Parenteral Stilbestrol in Prevention of Experimental Cinchophen Peptic Ulcer. J. Nasio.—p. 467.
Primary Malignant Tumors of Small Intestine: Report of 14 Cases. J. A. Weinbaum.—p. 478.
Effects of Beta (4-Hydroxy-3,5-Diiodophenyl)-Alpha-Phenyl-Propionic Acid-(Priodax) on Blood Sugar, Urea Nitrogen, Nonprotein Nitrogen and Icterus Index. A. X. Rossien.—p. 486.
*Duodenal Ulcer Concomitant in Identical Twins. H. M. Robinson. —p. 489.
Relationship of Proctologic Diseases to Gastrointestinal Disorders. J. Gerendasy.—p. 492.
Electrolysis in Stomach. R. Keller and B. V. Pisha.—p. 495.

Diethylstilbestrol in Prevention of Experimental Cinchophen Peptic Ulcer.—Nasio found that parenteral administration of cinchophen and of diethylstilbestrol propionate in dogs prevents appearance of the experimental cinchophen peptic ulcer in 100 per cent of the male dogs and in 22 per cent of the females. Most of the stomach of the experimental animals, particularly the male dogs, presented hyperplasia of the gastric mucosa. In 60 per cent of the females with cinchophen peptic ulcers the lesions were in the process of healing. In half of the animals receiving diethylstilbestrol alone the stomach seemed to be normal; in the other half a gastric hyperplasia and a congestive hemorrhagic gastritis could be seen. The difference in the prevention of cinchophen ulcers by means of diethylstilbestrol in female and male dogs may be explained by the lesser proliferative action of this estrogen on the gastric mucosa. The prevention of cinchophen ulcer with diethylstilbestrol may be the result of its epitheliotropic and vasodilating action, particularly its indirect effect of depression of the chlorhydropeptic activity.

Duodenal Ulcer in Identical Twins.—Robinson reports that 2 women who are twins evidently have duodenal ulcer and hyperthyroidism. The relapse and remissions of both diseases do not seem to travel in parallel lines, so that they cannot be accurately associated etiologically. The author's purpose in reporting these cases is to add to the reports of cases of identical diseases in identical twins and to show that duodenal ulcer should be considered quite common in the female sex and that duodenal ulcer occurs associated with hyperthyroidism.

Southern Surgeon, Atlanta, Ga.

13:431-492 (July) 1947

Use of Propylthiouracil in Hyperthyroidism. A. S. Jackson.—p. 431.
Muscular Relaxation in Abdominal Surgery with Use of Pentothal-Oxygen and Curare: Report of Over 1,100 Cases. T. C. Davison and A. H. Letton.—p. 437.
*Use of Tendon Grafts in Injuries of Flexor Tendons of Hand. S. L. Koch.—p. 449.
Biliary Peritonitis. D. P. Hall.—p. 453.
Fractures of Hip. S. P. Rogers.—p. 458.
Surgical Relief of Intractable Dysmenorrhea. T. L. Lee and H. F. Fuller.—p. 475.
Results in Gallbladder Surgery. L. W. Edwards and C. K. Gardner. —p. 480.

Tendon Grafts.—According to Koch the flexor mechanism of fingers and thumb consists essentially of a powerful motor—the flexor muscles of forearm and palm, whose action is exerted on strong, perfectly smooth taut cords, the flexor tendons, which are held in firm, perfectly fitting sleeves, the fibrous tendon sheaths, and are attached to a series of hinged blocks of bone, the phalanges. The author is concerned chiefly with the cords and retaining sleeves. If the surface of the cord or the lining of the sleeve is roughened, movement is impaired. If the sleeve is slit open along its superficial aspect, tension on the cord lifts it out of the sleeve, and the mechanical advantage of the pull on the blocks of bone is lost. Such difficulties can be avoided by making incisions that avoid the superficial aspect of the retaining sleeve and so prevent the tendon from being lifted out of its sheath, by making certain that in any operative procedure bleeding is completely arrested and that no oozing persists to cause fibrous tissue formation between tendon and sheath, by using the finest and least irritating suture material in repair and by making certain that no infection is present. The most satisfactory method of securing return of function, if it has been lost, has been the removal of the scarred remains of tendon and adherent tendon sheath and substitution of normal uninjured tendon from some other part. The author shows in sketches the technic of substituting a free tendon graft for hopelessly injured flexor tendons and the results of substitution of tendon grafts from foot for divided and widely separated flexor tendons of the middle finger. He is reluctant to consider the use of foreign material such as amniotic membrane, cellophane or tantalum foil to prevent adhesions between tendons and surrounding tissues. In the few cases in which he observed the effect of such materials, the result has been quite the opposite from that which was anticipated.

Surgery, Gynecology and Obstetrics, Chicago

85:1-128 (July) 1947

Radical Single Stage Extirpation for Cancer of Large Bowel, with Retained Functional Anus. W. W. Babcock.—p. 1.
Prognosis in Carcinoma of Colon and Rectum: Ten Year Follow-Up of 337 Patients. B. P. Colcock.—p. 8.
Congenital Atresia of Intestine and Colon. W. J. Potts.—p. 14.
Double Clefts of Lip. J. B. Brown, F. McDowell and L. T. Byars. —p. 20.
Transplantation of Ureters into Rectosigmoid. Y. Jidigian and W. Bickers.—p. 30.
Object, Value and Technic of Preoperative and Postoperative X-Ray Treatment in Carcinoma of Breast. G. E. Pfahler and G. P. Keefer. —p. 35.
Cystic Artery and Constituents of Hepatic Pedicle: Study of 500 Specimens. E. H. Daseler, B. J. Anson, W. C. Hambley and A. F. Reimann.—p. 47.
Air Arthrography of Knee Joint. J. G. Bonnin and J. L. Boldero. —p. 64.
Traumatized Muscle Tissue as Factor in Production of Shock. E. C. Mason and D. L. Richardson.—p. 71.
Improved Permanent Colostomy. B. K. Rank and J. Smith Jr.—p. 75.
Evaluation of Abdominal Wound Closure: Steel Wire Layer Closure Compared with Catgut Silk Layer Closure, Early and Late Results. H. M. Wiley and E. D. Sugarbaker.—p. 81.
Intestinal Lipodystrophy (Whipple's Disease): Preliminary Report of 3 Cases in Early Stage of Disease. J. deJ. Pemberton, M. W. Comfort, E. Fair and J. Zaslow.—p. 85.
New Concepts of Etiology and Treatment of Diverticula of Esophagus. B. T. King.—p. 93.
Tumors of Gastrointestinal Tract: Survey of 813 in Persons of Military Age During World War II. J. C. Ehrlich and O. B. Hunter Jr. —p. 98.
Streptomycin Therapy in Urinary Tract Infections. E. J. Pulaski and W. H. Amspacher.—p. 107.

Western J. Surg., Obst. & Gynecology, Portland

55:363-418 (July) 1947

Undernourished Full Term Infant: Case Report. R. D. McBurney. —p. 363.
Further Studies with Methergine and Its Effect on Pregnant Uterus. J. C. Brougher.—p. 371.
*Effect of Iodine Therapy on Blood Iodine and Basal Metabolic Rate During Pregnancy. F. B. Zener, N. A. David and N. H. Phatak. —p. 375.
Malignant Goiter: Lessons to Be Learned from a Twenty Year Follow-Up. R. Ward.—p. 383.
Symmetrical Double Aortic Arch: Report of Case. D. K. Crystal, H. W. Edmonds and P. F. Betzold.—p. 389.
*Diverticulitis of Colon in Gynecology. E. Allen and L. B. Donaldson. —p. 393.
*Study of 4 Cases of Normal Rh Positive Infants Born to Sensitized Rh Negative Women. Joan Howard, S. P. Lucia and Marjorie L. Hunt.—p. 401.
Office Procedure for Hysterosalpingography. A. P. Hudgins.—p. 407.

Effect of Iodine Therapy During Pregnancy.—According to Zener and his associates some degree of thyroid enlargement during pregnancy has long been considered normal. An intake of iodine which is just adequate in nonpregnant females may become insufficient during gestation and so leads to thyroid hypertrophy. This "work hypertrophy" is evidenced by measurable changes in the basal metabolic rate and the blood iodine, both of which show a definite increase. The authors attempted to correlate these factors operating during pregnancy in treated and untreated patients. They found that the blood iodine level of normal nonpregnant adults in the Pacific Northwest was between 8 and 12 micrograms per hundred cubic centimeters. The average basal metabolic rate in pregnancy was found to be consistently higher than the averages reported from other areas. It remained elevated for at least six weeks following delivery. An elevation of the blood iodine level and the basal metabolic rate occurred during the first month of pregnancy. The blood iodine showed the greatest increase at the time of delivery, and both it and the basal metabolic rate remained elevated for at least six weeks after term. The administration of one tablet of lipoiodine (0.03 Gm. of available iodine) daily during pregnancy limited the usual increase in the basal metabolic rate and, conversely, increased the basal metabolic rate when below normal range. A reverse relationship between the blood iodine level and the basal metabolic rate was apparent. A change in the former was accompanied by a shift in the opposite direction of the latter. The average blood iodine level of infants at birth did not rise in parallel to the mother's. This suggests that the placenta interposes some barrier to the free passage of iodine from the mother.

Diverticulitis of the Colon in Gynecology.—Allen and Donaldson say that among 158,077 patients admitted to the Presbyterian Hospital in Chicago since 1934 there have been 362 who had diverticulitis of the colon, and 223 of these were females. The authors review observations on the 59 patients who were treated by the gynecologic staff of the hospital. Colon diverticulitis is a frequent cause of left lower quadrant pain, bladder irritation and pelvic mass formation. Diverticulitis should always be considered in the differential diagnosis in women with this clinical picture. This is especially true if the patient is over 35 years of age. It is urged that all such patients be more thoroughly investigated by x-ray and stool examination before surgery is undertaken. The palpatory pelvic findings of a tender, fixed, lava-like mass flowing out from the region of the sigmoid colon is often found and when present is very characteristic. So frequently do patients with colon diverticulitis have associated diseases that one must be careful in stating that the symptoms are due entirely to colon diverticulitis.

Normal Rh Positive Infants Born to Sensitized Rh Negative Women.—Hemolytic disease of the newborn due to Rh incompatibility between mother and fetus is usually preceded by serologic evidence of maternal sensitization. It has been observed, however, that an Rh negative mother who has not demonstrated laboratory evidence of Rh sensitization may give birth to a child who is afflicted with hemolytic disease of the newborn, and also that a normal child may be born to a woman who has shown Rh antibodies in her serum during pregnancy. As an illustration of the latter phenomenon, Howard and her associates report 4 cases in which clinically normal infants were born of mothers showing definite laboratory evidences of Rh sensitization. Among the many hypotheses presented in order to account for this phenomenon, the most logical explanation appears to be offered by the hypothesis of the anamnestic rise of nonspecific antibodies or the hypothesis of the protective effect of specific subgroup blocking antibodies.

West Virginia Medical Journal, Charleston

43:225-260 (July) 1947

Present Status of Liver Disease. R. J. Stevens.—p. 225.
Spinal Anesthesia with Sedation in Obstetrics. A. P. Hudgins.—p. 233.
Oral Manifestations and Systemic Blood Diseases: A Review. H. W. Smith.—p. 236.
*Carbon Tetrachloride Poisoning, with Report of Case. F. J. Geraghty and W. A. Rogers.—p. 242.

Carbon Tetrachloride Poisoning.—According to Geraghty and Rogers, carbon tetrachloride poisoning occurs either after ingestion of the chemical or after inhalation of the fumes. They report that a man aged 26 who developed a hepatorenal syndrome after having swallowed by mistake a mouthful of carbon tetrachloride immediately afterward drank milk and eggs and vomited. He then consumed three bottles of beer and several jiggers of whisky and felt well until the next day, when diarrhea with the passage of burning, watery stools ensued. Severe body pains and headache, vomiting and the voiding of dark colored urine followed. A picture characteristic of toxic nephrosis and hepatitis with renal shutdown and congestive heart failure developed. Rapid digitalization was employed. Ringer's lactate 1,000 cc. daily for four days was given by infusion for the acidosis. Vitamin K in daily doses of 20 mg. hypodermically was started. To combat anuria 50 cc. of 50 per cent dextrose was given every three to four hours for a total of ten injections and diathermy applied to both kidney regions for one-half hour twice daily. The patient's condition was critical between the seventh and the thirteenth day. On the fourteenth day there were signs of improvement in both renal and hepatic functions. The patient was discharged cured on the thirty-second day. The lethal dose of carbon tetrachloride in man is extremely variable. The maximum tolerated dose is 4 cc., but fatalities have occurred after ingestion of 1.5 cc. A case has been reported with recovery after ingestion of 30 to 40 cc. of the chemical. Alcohol and fat increase the toxicity of carbon tetrachloride, whether it is inhaled or ingested.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Dermatology and Syphilis, London

59:199-238 (June) 1947

Atypical Favus, With Notes on 3 Cases and Review of Cases Published in Last Fifteen Years. C. H. Whittle.—p. 199.

Response of Scars of Cutaneous Leishmaniasis (Oriental Sore) to Injection of Leishmania Tropica Vaccine. F. Sagher.—p. 205.

British Journal of Experimental Pathology, London

28:69-160 (April) 1947

Influence of Chemical Constitution of Antibacterial Activity: III. Study of 8-Hydroxyquinoline (Oxine) and Related Compounds. A. Albert, S. D. Rubbo, R. J. Goldacre an B. G. Balfour.—p. 69.

In Vivo Activity of Penicillin Esters. J. Ungar.—p. 88.

*The Penicillin Produced by Aspergillus Parasiticus. H. R. V. Arnstein and A. H. Cook.—p. 94.

Prozone Phenomenon in Relation to Agglutinability of S. Typhi W. Hayes.—p. 98.

Titration of Cl. Welchi Epsilon Toxins and Antitoxin. I. Batty and A. T. Glenny.—p. 110.

Bodily Reactions to Trauma: Influence of Ischemia on Clotting Factor of Muscle. H. B. Stoner and H. N. Green.—p. 127.

Immunization of Human Beings with Red Cell Eluate and Other Types of Influenza Vaccine. R. Hare, D. M. Mackenzie, L. McClelland and M. Curl.—p. 141.

Plasma and Corpuscular Cholesterol in Sprue. J. S. Robson.—p. 152.

The Penicillin Produced by Aspergillus Parasiticus.—Arnstein and Cook described in 1944 the production of an antibiotic resembling penicillin which was provisionally termed "parasiticin." This was a metabolic product of Aspergillus parasiticus when grown under selected conditions, different conditions giving rise to other antibiotics. The authors report some properties of "parasticin," its production on a large scale and experiments leading to the final identification of the major constituent of the material as penicillin-II (penicillin-G or benzylpenicillin). The experiments show that the main antibiotic produced by A. parasiticus under the conditions described is penicillin-II, and the distinctive name "parasiticin" is no longer justified. The versatility of the Aspergilli in producing penicillins of different structures seems to be comparable with that of the Penicillia.

British Medical Journal, London

2:1-42 (July 5) 1947

*Inquiry into Epidemiology of Pemphigus Neonatorum. V. D. Allison and Betty C. Hobbs.—p. 1.

Gallbladder Complications Following Resection of Stomach for Peptic Ulcer. C. L H. Majoor and J. J. Suren.—p. 8.

Diathermy Dissection of the Gallbladder. R. J. McNeill Love.—p. 11.

Longest Span of Life Based on Records of Centenarians in England and Wales. V. Korenchevsky.—p. 14.

Epidemiology of Pemphigus Neonatorum.—In November 1943 Allison and Hobbs were asked to investigate an outbreak of pemphigus neonatorum in 8 infants in the main nursery of the maternity unit of a Cardiff hospital. This was the beginning of a series of observations on the epidemiology of pemphigus neonatorum which continued for two years. During this period 2,719 infants were born in or admitted to the unit. Of this number 111 developed pemphigus neonatorum, 21 staphylococcic conjunctivitis and 4 both these conditions. The results of the serologic identification of the strain of Staphylococcus pyogenes isolated from the lesions of the 132 cases indicate that there were three outbreaks, each due to a distinct serologic type of the organism; there were also a small number of sporadic cases due to different serologic types of Staph. pyogenes. Investigations in one large nursery in which 93 of the cases occurred showed that the infecting strain was widespread in the infants' environment and was isolated from the noses of a high proportion of the nursing staff, from the noses of healthy infants, from blankets and gowns and from dust and air in the nursery. The evidence suggests that the main reservoir of infection was the nasal passages of the nursing staff and that the infants were infected in the nursery and not by their mothers. Members of the nursing staff who are aware that they are heavy nasal or skin carriers of Staph. pyogenes should observe preventive measures, such as the application of penicillin ointments to the nostrils two or three times daily and the sniffing in of these ointments. The author also considers the advisability of eventually discarding the large infant nursery in favor of the mother and infant being nursed together in a cubicle or in small wards.

Lancet, London

2:1-40 (July 5) 1947

Quarantine, Incubation and Isolation at School. R. E. Smith.—p. 1.

*Further Observation on Inhibitory Substance (Nisin) from Lactic Streptococci. A. T. R. Mattick and A. Hirsch.—p. 5.

Effect of Penicillin on Serology of Late and Latent Syphilis: Study of 120 Cases Followed for Six Months or More. R. R. Willcox.—p. 8.

Micrognathia: Report of 2 Cases. A. M. Sweet and Margaret Kemsley. —p. 10.

Management of Permanent Colostomy: Study of 100 Patients at Home. C. E. Dukes.—p. 12.

Bronchomediastinal Tuberculosis: Prognosis and Treatment. H. Stevens. —p. 14.

Cerebral Amebiasis Treated with Emetine: Report of Case. P. Collard and D. Kendall.—p. 17.

Inhibitory Substance from Lactic Streptococci.—Mattick and Hirsch discuss an antibiotic substance, nisin, which was isolated from liquid cultures of Streptococcus lactis and is active in vitro against many types of pathogenic and other organisms. A method of semi-large scale preparation of the substance is described. Even in the impure state, nisin is effective in vivo against infections with Streptococcus pyogenes, Clostridium septicum and type II pneumococcus. Limitation of spread in experimental tuberculosis in guinea pigs has also been observed.

New Zealand Medical Journal, Wellington

46:*167-240 (June) 1947*

Some Medical Truants. C. H. Tewsley.—p. 169.

Penicillin in Treatment of Acute Hematogenous Osteomyelitis. G. J. Taine.—p. 178.

Extrapulmonary Tuberculosis: Frequency of Infection with Bovine Type of Tubercle Bacillus. Margaret K. Finlayson and N. L. Edson. —p. 184.

Use of Yolk Enriched Egg Medium for Cultivation of Tubercle Bacilli. Margaret K. Finlayson and N. L. Edson.—p. 190.

*Principles Underlying Management of Epileptic Patient. I. M. Allen. —p. 198.

Primary Tumor of Optic Nerve. W. J. Hope-Robertson.—p. 210.

Management of Epileptic Patient.—Allen defines principles for the management of epileptic patients, which he arrived at in the study of 3,500 cases. The epileptic factor and epilepsy are different things. The diagnosis of epilepsy depends on the presence of epileptic symptoms. The epileptic factor appears to be transmitted through family groups and appears to be subject to intensification and diminution as other familial factors. In the individual patient, the epileptic factor is characterized by waves of increased and of lowered intensity. The increase in intensity depends in part on the operation of other factors, which may thrust the epileptic tendency above the threshold of discharge. Emotional factors are most common. General toxic factors are responsible for the appearance of symptoms chiefly in childhood. Early physical changes in the brain and especially those which involve the cerebral cortex are present more often than is generally realized. Acquired changes affecting the brain may be degenerative changes in the cerebral cortex, vascular changes affecting the nutrition of the cerebral tissue, alterations in the balance of the cerebrospinal fluid, tissue changes due to trauma, and neoplastic changes. Epileptic attacks are not characteristic, but any fugitive, paroxysmal, disorderly, uncontrolled and recurrent manifestations of neurologic process at any physiologic level in the nervous system may be an expression of the epileptic state. All epileptic attacks are focal attacks. Every epileptic attack is a play between excitation and inhibition in the cerebral cortex, with a varying balance between them. Myoclonic jumps or jerks represent chiefly local excitation. Myoclonic jerks followed by weakness of the local part in which the jerks occur represent local excitation and then inhibition. The development of inhibition in response to excitation rising in one or in several portions of the cerebral cortex may lead to impairment of higher cortical functions. Proper management of the patient is possible only when the symptom has been recognized as an expression of the epileptic factor and every other factor which may thrust the tendency above the threshold of discharge has been identified.

Annales d'Oto-Laryngologie, Paris

64:1-116 (Jan.-Feb.) 1947. Partial Index

Surgery in Deafness. M. Aubry.—p. 5.
*Treatment and Prevention of Deafness of Tubal Origin by Radium Therapy of Nasopharynx. J. Reynaud.—p. 26.
Penicillin and Osteomyelitis of Superior Maxilla in Suckling Infants. J. Terracol, Y. Guerrier and J. Chalmeton.—p. 40.

Radium Therapy of Nasopharynx in Deafness.—Reynaud reviews papers by Crowe, Fowler, Proctor and others on the treatment and prevention of deafness by irradiation of the nasopharynx with radium or roentgen rays. The treatment is successful in all instances in which it is aimed at the prevention of deafness of tubal origin in children. The prognosis is less favorable in adults, but the treatment may be effective in preventing exacerbation of secondary lesions of the middle ear. Systematic employment of audiograms is indispensable for diagnosis and for control. The follow-up and occasionally continued treatment for the entire period of lymphoid hyperplasia and instability of the auditory function in young patients is essential. The usefulness of the nasopharyngoscope is emphasized. Irradiation of the nasal fossa should not be considered a panacea. The doses and the duration of the irradiation should be kept within cautious limits by consultation of the otologist with the radiotherapist.

Ann. di Radiologia Diagnostica, Bologna

18:165-448 (No. 3 & 4) 1947 Partial Index

*Hernia of Lung. C. Cacciari and G. Mazzecchi.—p. 263.

Hernia of Lung.—A man aged 67 received at the age of 6 years a trauma to the left half of the chest. At the age of 42 and again at 65 he suffered from cough which lasted about ten months. In the course of the last attack it was found that during inspiration or when the patient coughed a painless swelling protruded in the sixth intercostal space of the left half of the thorax. On palpation the contents of the swelling appeared to be pulmonary parenchyma. The amplitude of the pneumogram was diminished on the herniated side Hernia of the lung was demonstrated on roentgenologic examination as a clear, semioval image. The shadow was easily demonstrated in the left lateral position and following a diagnostic pneumothorax. The appearance and disappearance of hernia during inspiration and expiration, respectively, differentiates it from subcutaneous emphysema and from tumors of the thoracic wall.

Arch. del Inst. de Cardiol. de Mexico, Mexico, D. F.

17:121-292 (April 30) 1947. Partial Index

*Diagnostic Value of Angiocardiograms Obstained by Direct Intracardiac Injection Through a Catheter. I. Chávez, N. Dorbecker and A. Celis —p. 121.

Diagnostic Value of Angiocardiograms.—A method is described for the injection of an opaque substance directly into the right chamber of the heart by means of a catheter introduced through the external jugular vein. The "right heart-tongue" circulation time can thus be determined. This time indicates the appropriate moment for taking x-ray films. With this technic the opaque medium cannot escape to venous regions; its mixing with the blood is thus minimized, and a sharp outline of the cardiac chambers is thus obtained. Images of the left chambers and of the aorta and its branches are especially good, something which has not been achieved by the usual methods. With the greater precision afforded by a sharper outline, the authors have confirmed some facts previously noted, such as the septal connections and the anomalous location of the arterial trunks. They were able to confirm or modify several of the current notions about the cardiac topography, both normal and pathologic. They found some new facts such as the difference between the systolic and the diastolic images of the right side of the heart and the fact that the left medial arc is usually formed by the left branch and not by the main trunk of the pulmonary artery. The location, morphology and size of the left ventricle, and the differences depending on systole or diastole have been determined. The present observations confirm Nylin's suggestion that a normal left ventricle empties completely during systole, whereas a dilated and failing ventricle retains "residual blood," as shown by residual opaque medium. The angiocardiographic image of some congenital malformations is described for the first time. In patent ductus arteriosus the pulmonary artery or its left branch is usually filled by rebound through the duct at the time the aorta, not the right ventricle, is filled. This fact was not observed constantly possibly because it requires exact timing of the pictures. The presence of this sign permits the conclusion that the duct exists; its absence does not rule out its existence. The authors have visualized clearly for the first time aortic coarctation. They have also obtained excellent filling of aneurysms; a clear distinction of these cases with those of tumors in the mediastinum can thus be established.

Belgish Tijdschrift voor Geneeskunde, Louvain

3:481-530 (June) 1947

*Carrot Soup in Treatment of Intestinal Disturbances in Infants. R. Peeters.—p. 481.
Formation of Decidua in Ectopic Pregnancy. P. Brusselmans.—p. 487.
Topographic Radiologic Study of 200 Gastric and Duodenal Ulcers in Relation to Macroscopic Vascularization of the Stomach. G. de Busscher.—p. 491.

Carrot Soup for Intestinal Disturbances in Infants.—Peeters says that a carrot soup diet in nutritional disturbances of nurslings was used by Moro in 1907. The original recipe provided for 500 Gm. of carrots and 6 per cent sodium chloride in meat broth. Later the recipe was changed so that 500 Gm. of carrots was boiled for two hours in 1 liter of water, then passed through a fine sieve and filled up with boiled water to the total amount of 1 liter. To this 3 Gm. of salt was added. Young carrots are less suitable than mature ones. Carrot soup can be given to newborn infants and even to prematurely born infants. It is advisable particularly in dyspepsia and all forms of toxicosis. Carrot soup is usually given for from twenty-four to forty-eight hours, after which buttermilk, sour milk, protein milk or human milk is gradually introduced again. The effect of the carrot soup on the stool is usually noticeable after twenty-four hours. The diet promotes rehydration of the infant whose water economy has been impaired by diarrhea. As rehydration progresses, the toxic symptoms usually subside. The detoxifying effect of the carrot diet is probably partly due to the antiacidotic effect of its mineral salts. The carrot diet has an effect similar to the apple diet, banana diet, pectin-agar mixture and the like. These vegetable diets provide cellulose and pectins. The pectins are believed to be of greatest importance in diarrheal disturbances.

Deutsche medizinische Wochenschrift, Stuttgart

72:177-208 (April 18) 1947. Partial Index

Structure of Somatogenic Psychoses. K. Schneider.—p. 177.
*Experience with Therapeutic Application of Crystalline Estrogenic Substances. K. J. Anselmino and H. R. Schildbach.—p. 179.
*Results of Liver Biopsy: I. From Patients with Albumin Deficiency and Hunger Edema. von Falkenhausen and Gaida.—p. 184.
Intestinal Necrosis: V. Contribution to Surgery of Intestinal Necrosis. Meyer-Burgdorff.—p. 186.
Penicillin Therapy in Acute Gonorrhea of Female Genitals. H. Zuzak. —p. 188.
Etiology of Cirrhosis of Liver. A. H. Müller.—p. 192.

Therapeutic Application of Crystalline Estrogenic Substance.—Anselmino and Schildbach treated 202 women with menopausal symptoms or with menstrual irregularities by subcutaneous implantation of pellets or by injection of crystalline estrogenic substance. Artificial menopause in 119 of these patients was caused by hysterectomy. Bilateral oophorectomy or x-ray spaying had been performed in 16 of the 83 patients. Thirty-eight patients with uteri had secondary amenorrhea and 5 had oligomenorrhea. Relief of menopausal symptoms was obtained with a single implantation of 1 pellet of 25 mg. of cyren A (dioxydiethylstilbene) or of estradiol for a period of four to eighteen months. The effect of the cyren seemed to be stronger and more rapid but of shorter duration than that of estradiol because of the slower absorption of the latter. Removal of the pellet was required in about one third of the patients with uteri after two to four months because of the continuous bleeding from the proliferated endometrium. Treatment by pellet implantation is therefore suggested only for patients in whom the uterus has been removed surgically, while 2 ampules of 10 mg. of ovocylin (estradiol monobenzoate crystals) suspended in 2 cc. of a watery colloid liquid may be injected by the intragluteal route to patients with uteri. The four to eight weeks' duration of the effect of these injections was much shorter than that of the implantation of pellets, but the effect of the injections was not inferior to that of pellet implantation and was not associated with the risk of severe bleeding. The 43 patients with disturbances of menstruation were not benefited by implantation of pellets because of its irregular and incalculable effect. It is still too early for a definite evaluation of the effect of injections of a suspension of estrone crystals in patients of this type.

Liver Biopsy.—Falkenhausen and Gaida studied the role of the liver in disturbances of metabolism caused by albumin deficiency and hunger edema in 20 patients with inanition of several months' duration and with serum albumin contents of 3.6 to 5.88 Gm. per hundred cubic centimeters. There were no untoward reactions and no complications whether the liver puncture was performed before or after the paracentesis for ascites. Except for the reduced fat content, deposits of hemosiderin could not be demonstrated by Turnbull's blue, in contrast to the observations by other authors in animal experiments and on necropsy of patients who died from hunger edema. It is concluded that in man hemosiderosis may be associated with hunger edema which is no longer amenable to treatment. The occurrence of binuclear liver cells was demonstrated on liver biopsy. A more or less severe glycogen impoverishment was observed in the majority of the patients, although in some of them the glycogen content was almost normal but was irregularly distributed. There was no parallelism between reduced serum albumin and reduced glycogen, but apparently there was one between glycogen disappearance and duration of inanition. Death must result from the complete breakdown of glyconeogenesis. A therapeutic trial with intravenous administration of liver preparations is therefore suggested for patients with diabetes mellitus in hypoglycemic shock in which administration of grape sugar has been ineffective.

Gastroenterologia, Basel

72:81-144 (No. 2) 1947

Pancreatic Necroses as Sequel of Generalized Arteritis. M. Aufdermaur. —p. 81.

Biliary Hepatic Cirrhosis: Clinical Evaluation of 17 Biliary Hepatic Cirrhoses Observed at the University Clinic in Zurich from 1936 to 1947 and Corroborated Post Mortem. Simone Troesch-Paillard.—p. 96.

Results of Examination and Symptomatology in Several Abdominal Disorders. F. Hirschberg.—p. 125.

Pancreatic Necrosis as Sequel of Generalized Arteritis. —Aufdermaur says that in cases in which pancreatic necrosis is due to an arterial disorder the destruction of the tissue is the result of a nutritional impairment of the glandular tissue. Ischemic necroses develop which are similar to infarcts in other organs, and as a rule a stenosing arteritis is the underlying cause. The author observed 10 cases of pancreatic necrosis which resulted from an inflammatory arterial disease that caused ischemia of the glandular tissue of the pancreas. The 10 case histories are reported. In all 10 cases foci of necrosis were observed, and near these foci there were severe arterial changes. In 3 instances the foci were so small that they were found only on microscopic examination. They always occurred in numbers and were yellow or showed hemorrhagic spots. The term "spotted pancreas" well characterizes the picture. In addition to the necroses, spotted atrophy of the glandular tissue is evident. Canalicular infection can be excluded in all cases; the glandular changes are always closely connected with diseased vessels. The arteritis of the pancreas is only a partial manifestation of a general vascular impairment. Results of vascular damage differ in the various organs. In the kidney arteritis usually produces the picture of malignant nephrosclerosis, whereas in the pancreas, myocardium and spleen ischemic tissue necroses are usually found. The renal changes usually predominate in the clinical manifestations. The clinical diagnosis is usually malignant nephrosclerosis or chronic nephritis. In several of the reported cases the coronary arteries, the adrenal capsular and cortical arterioles, the splenic and cerebral arteries and the aorta were involved in the inflammation. The cause of the obstructive arteritis may be a focal infection such as a chronic tonsillitis.

Helvetica Medica Acta, Basel

14:195-314 (June) 1947. Partial Index

Roentgenographic and Microscopic Crystalloptic Investigations on Urinary Calculi. E. Brandenberger, F. de Quervain and H. R. Schinz.—p. 195.

*High Voltage Current Accidents with Serious Muscle Damage and Myoglobinuria. H. Fischer and P. H. Rossier.—p. 212.

In Vitro Investigations on Action Mechanism of Sulfonamides and Penicillin. A. Grumbach and K. R. Grilichess.—p. 231.

*New Contributions to Hereditary Transmission of Diabetes Mellitus. E. Hanhart.—p. 243.

*Action Mechanism of Ethyl Carbamate in Leukemias. S. Moeschlin. —p. 279.

High Voltage Current Accidents with Serious Muscle Damage.—Fischer and Rossier observed four serious high voltage accidents resulting from contact with high tension electric wires carrying a charge of 45,000 to 50,000 volts. The most noteworthy change was severe muscle damage accompanied with myoglobinemia and myoglobinuria, which in 2 cases led to death from anuria. High tension current accidents with severe muscle damage are accompanied with such severe tubular impairment of the kidney that death is probably chiefly the result of renal failure. Only high voltage current as a result of its extreme density is capable of producing such severe muscular damage over such extensive muscle regions in the course of about one second. In the presence of lower tension currents such effects are impossible because of the lacking density. The current of high voltage has the tendency to bypass internal organs (brain and heart) and to flow around the body like a mantle, involving chiefly muscle masses. The authors emphasize alkalization of the urine, immobilization of the injured extremities and bed rest for the patient in the prevention of renal damage. Sedatives should be given if the patient is excited. Plasma infusion is advisable regardless of whether plasma has been lost through burns or by diversion into the electrically impaired muscle. Subcutaneous infusion of isotonic salt or dextrose solution or perhaps rectal drop infusion is advisable to stimulate renal blood flow. In the presence of dark urine venesection and subsequent plasma infusion are advisable. Renal decapsulation may be necessary in prolonged anuria. Amputation of a severely damaged extremity may be necessary in order to prevent death from anuria.

Hereditary Transmission of Diabetes Mellitus.—On the basis of his observations Hanhart shows that a "manifestatio minima," i. e. an abnormal course of the blood sugar curves following administration of two doses of 25 or 50 Gm. dextrose (Staub's test), need not be present in the parents, in the siblings or in the children of diabetic patients. It is scarcely ever possible with this laboratory method to recognize premorbidity in a patient liable to develop diabetes. Five new genealogic tables, containing altogether 72 diabetic patients, prove that only simple recessive heredity can explain the prevalence of the disease in these families arising from an ascendancy which can be traced back to the sixteenth and seventeenth centuries. The appearance of diabetes observed on twelve occasions in one parent and one or two of the children can be explained without difficulty in every case as a pseudodominance according to Mendel's law. There are not less than 592 diabetic children originating from these families. The uncorrected disease coefficient for these is 2.02 per cent and thus about half as high as what Steiner computed on the basis of 411 diabetic children in Berlin (3.9 per cent). Hanhart made his observations in a Swiss mountain canton with about 35,000, mostly old established, inhabitants having relatively large families and considerable longevity. As regards eugenics the author concludes that patients with diabetes mellitus should limit their offspring and should never marry persons who have a family history of diabetes mellitus.

Action Mechanism of Ethyl Carbamate in Leukemias. —Moeschlin says that, stimulated by a British report, ethyl carbamate (urethane) was used in the treatment of leukemia in Löffler's clinic. He relates some investigations that were undertaken to study the action mechanism of this substance in leukemic conditions. The blood picture of healthy men who were treated with therapeutic doses of ethyl carbamate was characterized by a distinct decrease in the number of lymphocytes, while the granulocytes, thrombocytes, erythrocytes and reticulocytes were not noticeably affected. Even the slight depressant action on mitosis in granulocytopoiesis observed in

2 cases was still within the region of experimental error. In rabbits no change in the blood picture could be determined with daily doses of 1 Gm. even after prolonging treatment for ninety-two days. In chronic myelocytic leukemia the myelogram and the splenogram showed no appreciable changes in cell composition apart from a distinct increase in erythroblasts and polymorphonuclears. The persistence in the bone marrow and spleen of the leukemic cell picture when ethyl carbamate is administered is striking when compared with the changes occurring during arsenic and x-ray therapy, where there is a pronounced shift toward ripe cells. The calculation of the mitotic index for the leukemically deranged white (granulocytopoietic) groups under the influence of ethyl carbamate shows a decrease in mitotic activity to one half of the former value, while the mitotic index for erythropoiesis rises to double. The favorable action of ethyl carbamate in chronic leukemic disease is therefore a consequence of the strong selective suppression of the cell division of the pathologically deranged "neoplastic" leukemic cell groups. These findings suggest search for similar substances with a therapeutic effect on mitotic activity of malignant tumors.

Kuba, Havana

3:79-100 (April) 1947. Partial Index

*Liver in Amebiasis: Clinical Aspects. J. Tanca Marengo.—p. 79.

Amebic Hepatitis.—Tanca Marengo reports good results with intravenous emetine therapy in acute or chronic amebic hepatitis of adults. The diagnosis is made on the presence of hepatomegaly and the therapeutic response to emetine. Treatment consists in daily intravenous injections of 4 mg. of emetine and 60 mg. of thiamine for eight or ten days, followed by the same doses intramuscularly for one week. The treatment is contraindicated when symptoms of intolerance (tachycardia and asthenia) appear. When the emetine therapy for diagnosis is not conclusive, an exploratory laparotomy is indicated for the local treatment of the lesion.

Minerva Chirurgica, Turin

2:197-234 (June) 1947. Partial Index

*Bilateral Calcification of Ovary Due to Tuberculosis: Rare Case. C. Scartozzi.—p. 209.

Calcification of Ovary.—The subject of this report is a nulliparous woman aged 55 who for the last seven years had observed enlargement of the abdomen and had recently had lumbosacral pain. X-rays revealed calcified ovaries. Bilateral oophorectomy disclosed calcification of the ovaries whereas the remaining genitalia were normal. Microscopic study of the ovaries led to a diagnosis of caseous tuberculosis with advanced calcification. The isolated localization of the tuberculous process suggests hematogenic origin of infection.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

91:1289-1368 (May 24) 1947. Partial Index

*Unusual Case of Open Ductus Botalli. D. P. R. Keizer.—p. 1296.
Rheumatic and Syphilitic Nodules Near the Joints. O. H. Dijkstra.—p. 1299.
*Plasma Fractions in Hemophilia. S. van Creveld and G. G. A. Mastenbroek.—p. 1305.
Studies on Urines of Parturient Women. G. A. Lindeboom.—p. 1313.

Unusual Case of Open Ductus Botalli.—Keizer reports that a girl aged 13 who had been under his observation for about a year was 6 inches under normal size and much reduced in weight. There were indications of an open ductus botalli, and a ligation was considered. The thorax was opened, but the conditions found were such that effective surgical treatment was impossible. The thorax was closed and the child died two weeks later. At operation and at necropsy it was found that the aorta supplied the blood for the head only, whereas the open ductus botalli formed a passage between the pulmonary artery and a pseudoaorta. There was also a large defect in the ventricular septum. A diagram illustrates the peculiar congenital malformation of the heart.

Plasma Fractions in Hemophilia.—Van Creveld and Mastenbroek report the results obtained in hemophilic conditions, in vitro as well as in vivo, with a fibrinogen solution that was obtained by ether precipitation from normal plasma. By the injection of this solution of fibrinogen it was possible to reduce the coagulation time in hemophilic patients to a great extent and for a long period. Repeated intravenous injections of this substance produced no disagreeable reaction and was not followed by a refractory period. It is still an open question whether this substance is a protein or a substance that is bound to protein. Products that promote coagulation of hemophilic blood in vitro were obtained also from the placenta, but these substances were ineffective in vivo.

91:1449-1528 (June 7) 1947. Partial Index

Thiemann-Fleischner's Disease (Osteochondritis of Phalanges of Fingers). J. Dijkstra.—p. 1458.
*Epidemic of Comedones and Vitamin A Deficiency. W. J. Hohmann and G. W. Beening.—p. 1465.
Fulminant Form of Meningicoccic Sepsis (Waterhouse-Friderichsen Syndrome): Epidemic on Board Ship. P. H. Kramer.—p. 1470.

Epidemic of Comedones and Vitamin A Deficiency.—Hohmann and Beening report 13 cases observed at the dermatologic clinic of the University of Groningen in which there were large numbers of comedones frequently associated with perlèche, phrynoderma, xerosis and in 1 case xerophthalmia. No cosmetics were used. The authors think that the low content of vitamin A in the blood serum and the favorable effect of vitamin A application refute Garnier's opinion that the disorder is due to the use of harmful cosmetics. Garnier and other French dermatologists had observed such "epidemics of comedones" during the war. Hohmann and Beening say that as early as 1909 Dore of England described a disorder which is characterized by a large number of blackheads.

Nordisk Medicin, Gothenburg

34:1081-1144 (May 9) 1947. Partial Index

Gastritis. F. Hirschberg.—p. 1081.

Hospitalstidende

*Uterine Fibromyoma in Extrusion (Fibromyoma Uteri in Expulsione). E. T. Madsen.—p. 1087.

Duodecim

Delivery of Afterbirth and Early Puerperium and Influencing Factors. H. Sauromo.—p. 1095.

Norsk Magasin for Laegevidenskapen

Purpura with Hyperglobulinemia. S. Humerfelt.—p. 1101.
Sturge-Weber's Disease. K. Rørvik.—p. 1104.
Intoxication with Sodium Nitrate. P. Amundsen.—p. 1107.
Three Additional Cases of Temporal Arteritis. O. J. Broch and Øyvind Ytrehus.—p. 1111.
*Poliomyelitis in Mother and Newborn Infant in Family with Multiple Cases. A. G. Frøvig.—p. 1115.

Hygiea

Observations on Endourethral Electroresections. J. Hellström.—p. 1117.
Gelatin Foam as Hemostatic. G. Bauer.—p. 1121.
Fibrinogen Index in Thromboembolism. S. Borgström.—p. 1122.
Relation Between Plasma Chlorides and Blood Platelet Chlorides in Postoperative Course. O. Lundskog.—p. 1122.
Eclampsia Therapy from Point of View of Fluid Balance. S. Lindgren.—p. 1124.
Surgical Treatment of Arthritis Deformans of Hip. O. Sjöqvist.—p. 1130.
Effect of Trauma in Stimulating Healing. P. Sandblom.—p. 1131.
Principles in Surgery of Hand. E. Moberg.—p. 1132.

Uterine Fibromyoma in Extrusion (Fibromyoma Uteri in Expulsione).—Madsen discusses uterine fibromyomas which are extruded by uterine contractions in a mechanism like that of childbirth in connection with 60 cases (44 submucous, 16 intramural), of which 54 developed from the uterine cavity and 6 from the cervical canal. Microscopic examination was made in 55. One case was fatal. These tumors, he says, appear in about 6 of 100 cases of fibromyomas, vary from the size of dove's egg to that of a child's head, the submucous ones rarely being larger than a hen's egg, and most often occur between the ages of 40 and the menopause and seldom after the menopause. Certain diagnosis is made only on gynecologic examination; a dilated external os containing a tumor with a peduncle or broadly attached to the wall of the uterine cavity is characteristic. The symptomatology is variable, all transitions being seen from cases without symptoms to those with fever, toxemia and purulent discharge in the gangrenous forms. The strong uterine contractions during menorrhagia and metrorrhagia combined with necrotic changes lead to loosening of the tumors from the uterine walls and their expulsion. Treatment must be individualized. The prognosis is good. Spontaneous recovery may occur, but there is danger of anemia in untreated cases.

Poliomyelitis in Mother and Newborn Infant in Family with Multiple Cases.—Frøvig says that of the 4 members of a family having poliomyelitis during the same epidemic 2 were a mother aged 20 and her newborn child. The mother apparently acquired the disease during the last days of pregnancy; the lower extremities became paralyzed on the second day after delivery. She can now walk with the aid of supporting bandages and canes. The infant developed symptoms of poliomyelitis on the fourth day of life and four days later could not move arms, legs or head. On discharge there was still considerable paralysis, especially in the extremities on one side. Poliomyelitis in infants has not before been reported earlier than five days after birth (Wernstedt). If the child was infected after birth, the incubation period in poliomyelitis can be as short as four days. The possibility of intrauterine infection is considered, but evidence of it is lacking. Thirty-seven years ago the mother's uncle had poliomyelitis.

Presse Médicale, Paris

55:401-412 (June 14) 1947

Penicillin Therapy in Early Syphilis. C. Huriez and M. Desurmont—p. 401.

*Treatment of Carriers of Diphtheria Bacilli with Tyrothricin. R. Turpin, J. Combet, J. Roujeau and R. Seillon.—p. 402.

Penicillin Therapy in Early Syphilis.—Twenty-two patients who had early syphilis were treated by Huriez and Desurmont with penicillin and 179 patients were treated with penicillin combined with arsenicals or bismuth or with penicillin combined with both of these drugs. Healing of syphilitic lesions occurred in 50 per cent and the serum became negative in one third of the patients treated with penicillin alone in spite of the total dose of 4,800,000 to 9,600,000 units. Serologic failures were reduced from 72 to 51 per cent when treatment with arsenical preparations was combined with penicillin; they were reduced to 41 per cent by combining penicillin with bismuth, and to 37 per cent by treatment with penicillin, arsenic and bismuth combined. Healing of syphilitic lesions took place in 85 per cent of the patients treated with bismuth as compared with 45 per cent treated with penicillin. Arsenic proved best since cicatrization occurred in 90 to 100 per cent of the patients treated with arsenical preparations and penicillin combined, with or without bismuth. The authors recommend a regimen of 2,400.000 units of penicillin and twelve injections of bismuth *within one month,* to be repeated twice after two weeks of rest, or triple successive treatment according to Wile, starting with an injection of an arsenoxide for the first three days, followed by a course of 1,200,000 units of penicillin during the next week and terminated by five injections of bismuth. These treatments should be supplemented with courses of bismuth.

Tyrothricin in Diphtheria Carriers.—Turpin and his co-workers dusted the nasopharynx of 32 carriers of diphtheria bacilli (infants, children and adults) with a powder of bismuth subnitrate and tyrothricin. The powder was applied three times within twenty-four hours one hour after the meals and was repeated three times in seventy-two hours. In 4 of 28 carriers the diphtheria bacilli disappeared after one dusting with a powder of 0.5 Gm. per hundred cubic centimeters, in 16 after two dustings with this powder and in 8 after nine dustings. The total amount of tyrothricin contained in these nine dustings was 0.0045 Gm. The follow-up of these former carriers three times a week and then at intervals of two weeks for more than two months did not reveal any recurrences. The 4 resistant carriers were given a second course of nine dustings but with a powder of 5 Gm. per hundred cubic centimeters and with a total amount of 0.045 Gm. of tyrothricin. The density of the diphtheria bacilli was reduced in 2 of these carriers and the bacilli disappeared in 1 after twenty-one dustings with powder of 5 Gm. per hundred cubic centimeters. The dustings were well tolerated, and there were no untoward reactions even in the infants. The three partial failures are not to be considered as definite failures. This method of treatment is recommended for reducing the incidence as well as the hospital stay and the period of inactivity of carriers of diphtheria bacilli.

Revue de la Tuberculose, Paris

11:155-306 (No. 3 & 4) 1947. Partial Index

*Secondary Pulmonary Infiltration Originating from Lymph Nodes. A. Dufourt and P. Mounier-Kuhn.—p. 155.

*Tuberculosis in Denmark: Etiologic Considerations. T. Madsen.—p. 170.

Secondary Pulmonary Infiltration.—Dufourt and Mounier-Kuhn report 15 cases of secondary pulmonary infiltration from perforating lymph nodes in children and adults between the ages of 2 and 25 years. Forty roentgenograms and tomograms were made. Bronchoscopy revealed that the incidence of tracheobronchial lymph nodes perforating and fistulizing into the bronchi three to six months or even ten to twelve months after the primary infection is much higher in children and in adults than was expected. The clinical aspect of this minor syndrome may be less pronounced and more polymorphous than that of the severe syndrome causing dyspnea and disseminated bronchopneumonia. There may be small fistulas frequently masked by edema or secretion with more or less dense shadows punctuated with miliary granules or nodules the size of a pea. Fistulas with limited shadows have a tendency to spontaneous recovery; those with considerable densities may have a less favorable prognosis and artificial pneumothorax is suggested for their treatment. Considerable adenopathy may produce only small fistulas, but perforating lymph nodes of small volume may cause complications such as stenosis or atelectasis. Tomograms which show the hilus and which demonstrate a bronchus with thickened walls originating from a hypertrophic hilar lymph node and reaching the center of the infiltrated lung area may be an aid in the differential diagnosis against precocious tertiary infiltration in adults.

Tuberculosis in Denmark.—Statistics presented by Madsen show that, except for a temporary increase caused by alimentary deficiency during the first world war, the mortality rate of tuberculosis in Denmark had declined constantly since the end of the last century up to 1939. The low mortality rate of 3.5 for 10,000 inhabitants was maintained during the period of 1939 to 1945. The mortality rate in the capital was somewhat higher (4.4) as compared to that in the provincial towns (3.6), but the mortality rate in the villages was still lower (2.7 for 10,000 inhabitants). In addition to the fact that tuberculosis is a reportable disease in Denmark, treatment and isolation of tuberculous patients in sanatoriums (1 bed for every thousand inhabitants) and community dispensaries (1 for every hundred thousand to 200,000 inhabitants) are responsible for a considerable increase in the number of persons with a negative tuberculin reaction. In Copenhagen the percentage of school children with a positive tuberculin reaction has been reduced from 16.6 in 1937 to 5.6 in 1945. Seventy-five per cent of the inhabitants of Copenhagen between the ages of 15 and 34 years submitted voluntarily to an examination. Prophylactic inoculation with BCG vaccine was done on a large scale among those with a negative tuberculin reaction. Similar measures are intended for the population older than 35. BCG vaccination is obligatory for members of the armed forces.

Semana Médica, Buenos Aires

54:721-764 (May 29) 1947. Partial Index

*"Quinine Test" for Function of Liver. L. F. Pallardo.—p. 721.

Peptic Ulcer. J. M. Mesa.—p. 742.

"Quinine Test" for Function of Liver.—Pallardo carried out the quinine test for liver function in five groups of persons: (1) 55 patients with hepatic or biliary diseases, (2) normal persons, (3) patients with various diseases and a normal liver, (4) alcoholic addicts and (5) constitutional asthenics. The results were positive in all patients but 2 with hepatic disease and in half the patients with biliary diseases. The test proved to be of greater diagnostic value than the Takata and Weltmann tests, formolgelification in the blood serum and in the blood plasma, and the velocity of sedimentation of erythrocytes. In normal persons and in acloholic addicts the quinine test was more reliable than the other tests, with negative results in 41 out of 42 normal persons and positive results in 4 out of 10 alcoholic addicts (the positivity showing latent liver deficiency). There were also positive results in 5 out of 14 cases of constitutional asthenia. In 3 of the 5 cases the galactosuria test also was positive. Positive results in this group show functional insufficiency of the liver in constitutional asthenia.

Book Notices

Physical Medicine in General Practice. Edited by Arthur L. Watkins, M.D., and others. The American Practitioner Series. Reprinted from Clinics, April, 1946; Vol. IV, No. 6. Fabrikoid. Price, $5. Pp. 341, with 7 illustrations. J. B. Lippincott Co., 227 S. Sixth St., Philadelphia 5, 1946.

The place of physical medicine in the fields of medicine and surgery and in those specialties in which it is of particular value is presented by a group of contributors each one of whom has been carefully selected for his experience and long years of study of the subject. The content of the book is well balanced. Emphasis is placed on the diagnostic and therapeutic aspects of physical medicine according to their importance in each field. The book is written primarily for practicing physicians and surgeons. Therefore the technical side of physical medicine has been minimized and the emphasis has been placed on the clinical application of the various technics to the conditions commonly encountered by the practitioner. The excellent chapter on factors to be considered in prescribing physical medicine by Dr. Earl C. Elkins is of particular significance, for it is only through the use of a carefully considered and clear prescription that the practitioner can adequately instruct the physical therapist or occupational therapist and so obtain the maximum benefit for his patient. Emphasis is given also to the importance of the complete rehabilitation of the patient to the point where he may resume a normal life or a life in which his maximum capacity is realized. There has been great need of an interpretation of the rapidly developing field of physical medicine to other practitioners. This volume, which has been developed under the editorship of Dr Arthur L. Watkins, ably presents the contribution of physical medicine to the care of many types of patients and should be of interest and value to many members of the medical profession

Pellagra in the Oto-Neurology and Rhino-Laryngology. By Otto L. E. de Raadt, M.D. Boards. Pp. 172, with 4 illustrations. Universitaire Pers Leiden, Nieuwsteeg 1, Leiden, 1947.

The author has examined 160 cases of pellagra in the prison camps of Bandoeng, Batavia and Pakan Baroe from 1942 to 1945. It is admirable that he was able under the most adverse conditions to carry out such a splendid clinical observation. In his monograph with 131 bibliographic references he gives a description of pellagra from the pathologic and anatomic points of view and stresses the point that changes of the skin are by no means present in all cases and that the labyrinthine symptoms are initial signs occurring long before a dermatitis may appear. He further emphasizes the otoneurologic syndrome which consists of labyrinthine hyperexcitability, dizziness, disturbances of the balance and nystagmus, together with such concomitant symptoms known to be present in pellagra. It is interesting that cochlear symptoms have been observed in only a small number of cases (26 per cent), consisting of tinnitus and conduction deafness. The author supposes that the labyrinthine symptoms are caused by an involvement of the brain stem due to avitaminosis, whereas the internal ear is not involved. Necropsy material was not available, but de Raadt states that "the underlying pathology of the otoneurological disturbances is a degenerative brain stem encephalitis." He further believes that in temperate climates patients evidencing Ménière's syndrome may have early and sometimes monosymptomatic pellagra. He feels that a riboflavin deficiency plays the most important part in bringing out the central nervous system symptoms, the retrobulbar neuritis and some associated symptoms. In therapy he feels one should play safe and certainly do no harm by giving all factors of the B complex, and occasionally the addition of desiccated hog stomach should be considered.

Psychopathology: A Survey of Modern Approaches. By J. Ernest Nicole, O.B.E., L.M.S.S.A., D.P.M.R.C.P.&S., Medical Superintendent, Winwick Mental Hospital, Warrington, England. Fourth edition. Cloth. Price, $4.75. Pp. 268. William Wood & Co., Mt. Royal & Guilford Aves., Baltimore 2, 1946.

In the preface to the first edition the author wrote "This handbook . . . is designed to provide a general survey of the different schools of today . . . : to show some of the points at which different lines of approach approximate to one another: and to indicate, by references to important authors, directions in which further reading might prove profitable and interesting." He has succeeded exceedingly well. He outlines the different approaches to psychopathology from Maxwell, Mesmer, Charcot, Babinski and Janet to Freud and his followers, who constitute the backbone of dynamic psychiatry as practiced today. In so doing he outlines the views of many others who have contributed something of value to the understanding of psychopathology. The theories, formulations, elaborations and contributions of such students as Jung, Adler, Prince, Watson, Frost, Burredge, Kretschmer, Marston, McDougall and Horney are clearly outlined. For the most part the author cleverly abstracts the formulations of the different schools of thought without passing judgment on their contributions. Probably the only real weakness in the book is the fact that there are a few exceptions to this pattern. Some readers may criticize Nicole's attempts to classify people into character types. Such attempts have been made by many writers, and the value of such classification is of doubtful value. The bibliography is excellent and the index adequate. Students of psychopathology will not only profit from reading this book but may be stimulated, as the author suggests, to further investigation of this important subject.

Schorzenia narzadów krwiotwórczych w świetle badań bioptycznych szpiku kostnego, śledziony i gruczołów chłonnych. [By] Dr. Julian Aleksandrowicz. [Diseases of Hemopoietic Organs in Light of Biopsy Studies of Bone Marrow, Spleen and Lymph Glands.] Boards. Pp. 265, with 57 illustrations. D. E. Friedlein, Rynek Podgórski 2, Cracow, 1946.

This monograph deals with diseases of hemopoietic tissues based exclusively on the study of biopsy material obtained by sternal, splenic and lymph node puncture. Several books of the same sort have been published recently in various languages. Technic of biopsy and of preparation of slides, anatomy and physiology of blood forming tissues (a very good chapter), relation between the nervous system and bone marrow, and nomenclature are treated in five general chapters. The remaining 150 pages are taken up with systematic discussion of various diseases arranged in the usual manner.

The presentation is clear and thorough. The author, a distinguished hematologic investigator, displays a profound knowledge of literature of various countries. His critical analysis of the many controversial questions makes the book especially valuable to the advanced student. The illustrations are not of the same order of excellence as the text. Many show glaring imperfections.

The book is a credit to the tenacity and scientific enthusiasm of its author. As stated in the introduction, the first manuscript was lost when Cracow was occupied by the Germans at the beginning of the war. Fortunately the slides were saved. The text was rewritten between 1942 and 1944. The manuscript had to be buried in the ground in May 1946 and was dug out in February 1947.

Fundamentals of Clinical Neurology. By H. Houston Merritt, M.D., Professor of Clinical Neurology, College of Physicians and Surgeons, Columbia University, New York City, Fred A. Mettler, M.D., Ph.D., Associate Professor of Anatomy, College of Physicians and Surgeons, Columbia University, and Tracy Jackson Putnam, M.D., Professor of Neurology and Neurological Surgery, College of Physicians and Surgeons, Columbia University. Fabrikoid. Price, $6. Pp. 289, with 96 illustrations. Blakiston Co., 1012 Walnut St., Philadelphia 5, 1947.

This book has been designed for the student who is just beginning the study of clinical neurology, and it is admirably suited to his needs. There is a definite correlation of anatomy and physiology with the clinical manifestations of disease. The structure and function of the nervous system are presented in detail and with excellent illustrations. These fundamental subjects are presented much more fully than are the clinical aspects of neurology, but they should be in a book of this character. This presentation provides the medical student late in his sophomore or early junior year with a much needed review of his past work and with just enough clinical material to bring out the correlation with the basic sciences to whet his appetite but not to overwhelm him. The technic of examining the patient for the purpose of eliciting the manifestations of neurologic disease is also discussed.

On page 13 the statement that "If the patient does not complain of difficulty in vision . . . examination of acuity and visual fields need not be routine" is poor advice which, if followed, will eventually lead to error. The statement on page 70 "Immediately after nerve section, hyperalgesia is present for several hours in the denervated area" is not true if the author means hypersensitivity to painful peripheral stimuli, which is the usual meaning of hyperalgesia. In the table on page 83 in which various intoxications of the nervous system are presented the toxic effect of lead on the cerebrum is omitted. There are a few similar minor errors.

The book is to be highly recommended to the beginning student in neurology. It is not a complete textbook in this field and was not intended to be. There is a useful index but no references to the literature.

An Approach to Social Medicine. By John D. Kershaw, M.D., D.P.H., Medical Officer of Health, Accrington, England. Cloth. Price, $4.50. Pp. 329. William Wood & Co., Mt. Royal & Guilford Aves., Baltimore 2, 1946.

The book is written for members of the medical profession and for interested laymen. The bibliography indicates that the author has read widely in the popular, mystical and philosophical literature of our times but not too much in the fields of economics, political science, sociology and logic. He notes that in the past the position of medicine was defensive, since it had to be content with the work of conquering diseases. Now that medicine has found methods to cure or control many diseases it is able to consider taking the offensive in a twofold activity: (1) "development of medicine in relation to social life" and (2) "the influencing of social activities in the interests of human well-being."

In the first part of the book the author defines society as the association of human beings for common defense against the hazards of life and for the exploitation of natural resources in the interest of human well-being. Then he develops his conception of the structure and function of society. It is unfortunate that he considered society as a living organism when he is aware that the analogy is inadequate for his purposes. He suddenly drops the comparison when he comes to the chapter devoted to the collective mind. Social theory based on biologic analogy is groundless.

Dr. Kershaw's real contribution is in part II, where he shows that the task of social medicine lies in the integration of medicine with social activities. He is on factual ground when he reviews [illegible] contributions of medicine to social progress through the [illegible]vement of the functioning powers of the members of [illegible]y. Health is redefined to be not merely freedom from [illegible]ase but a state of fullest functional efficiency. Medicine at present is driving toward a fuller understanding of the relation of environment to health and disease. More than that, it is making serious efforts to modify the factors which underlie the social problems of health. In England doctors have trespassed, particularly during the war, the boundaries of traditional medicine in their activities concerned with malnutrition. Kershaw discusses the more important of these problems and offers suggestions for practical action in the difficult task which social medicine faces, albeit advising the reader to take them for just that and no more.

Studies and Essays in the History of Science and Learning Offered in Homage to George Sarton on the Occasion of His Sixtieth Birthday, 31 August 1944. Edited by M. F. Ashley Montagu. Cloth. Price, $12. Pp. 597, with illustrations. Henry Schuman, 20 E. 70th St., New York 21, [n. d.].

This book is interesting and informative, as might be anticipated from the brilliant list of contributors to this volume that honors George Sarton. However, any random selection of essays under circumstances such as these can hardly be integrated or subjected to rigid selection. The contributions vary in quality from those of genuine value to the trivial. The editor is to be complimented for the skilful balance that he has achieved. Among the interesting papers are those of Charles Singer (The Philosophical Background of Vesalius), Harcourt Brown (Buffon), Cassirer (Galileo's Platonism), Lenzen (Helmholtz) and Delevsky (The Idea of the Eternal Cycle). Apart from the papers on Vesalius and Helmholtz, few of the contributions will be of particular interest to physicians. The book is well printed, but no index has been supplied.

Office Immunology Including Allergy: A Guide for the Practitioner. Edited by Marion B. Sulzberger and Rudolf L. Baer. Authors: Marion B. Sulzberger, M.D., Professor of Clinical Dermatology and Syphilology and Director, New York Skin and Cancer Unit, New York Post-Graduate Medical School and Hospital, New York, and others. Cloth. Price, $6.50. Pp. 420, with 16 illustrations. Year Book Publishers, Inc., 304 S. Dearborn St., Chicago 4, 1947.

This excellent book is a compilation by six authors under the editorial supervision of M. B. Sulzberger and R. L. Baer, both dermatologists. The other authors include an allergist (W. C. Spain), a pediatrician (Abram Kanof), an immunologist (A. J. Weil) and a third dermatologist (N. M. Kanof). The material presented is a compilation of practical information. This is at times rather loosely put together under general headings, so that apparently unrelated conditions like diphtheria, botulism and brucellosis are included in the same chapter. The subject index is adequate. No bibliography is included.

As one might expect in a compilation by six authors, the quality of the material presented varies. The first two chapters, on common technics, are well written. Difficult procedures are carefully described and detailed precautions given when any danger might exist from their improper use. The chapter dealing with transfusion reactions is excellent. The difficult subject of the Rh factor is clearly and simply explained. The subject of dermatologic allergy is likewise well covered by Sulzberger and Baer. Here much useful information on drug allergy and contact dermatitis has been included from many sources. Throughout the book the authors indicate where materials for special tests or treatment can be obtained and the dose to be used.

The deficiencies of the book are primarily in the attempt to cover too many subjects in too little space. It would have been much better to omit the chapter on miscellaneous allergies. This consists of nine pages devoted to allergy of the eye, the gastrointestinal tract, allergic headache and "other pathologic states attributed to allergy." It is impossible to do justice to such a variety of subjects in so little space. Similarly the chapter on immunology of infections could be greatly improved by a more detailed discussion of common conditions. The uncommon or rare diseases which have been included merely because one of their characteristics is an altered acquired specific tissue reactivity might have been omitted to provide more space for common diseases.

The Medical Story of Early Texas, 1528-1853. By Pat Ireland Nixon, M.D., President, Texas State Historical Association, San Antonio, Texas. Foreword by Dr. Chauncey D. Leake. Cloth. Price, $6. Pp. 507, with illustrations. Published by the Mollie Bennett Lupe Memorial Fund. The Author, 1022 Medical Arts Bldg., San Antonio 5, Texas, 1946.

For some reason that is not clear, most of the state medical histories which have appeared in recent decades have related to the Southern states—to Virginia, Kentucky, Tennessee—and one might even place California partially in that category. The North Carolina Medical Society is seriously at work on a history of that state. Now, in presenting this study on Texas, Dr. Nixon has given us the story of a state whose unusual experience under several flags lends color to its medical as well as its political history. Dr. Nixon bases the account on a thorough use of a wide range of published and unpublished sources, and in this respect his work is a model for future state histories.

The greater part of the book is distinctly readable, both as a matter of style and because of the quotations from often dramatic original documents. The story opens with the Indians and with vivid and almost incredible medical adventures of Cabeza de Vaca during the sixteenth century and then proceeds through the Spanish, French and Mexican periods to the era of the republic. Although the political background of Texan experience was quite different from that of other states, the medical panorama unfolded here was usually similar to that of the United States. There was the same tragic struggle with endemic and epidemic fevers against the odds imposed by scientific ignorance. There were the same early and ineffectual attempts to provide hospitals, regulate medical practice and set up medical schools and societies. Hordes of quacks and sectarians descended, as elsewhere, on the Lone Star State. Not until the 1850's, after Texas was admitted to the Union, was the state medical society finally established.

In certain of the chapters the author gives a series of biographic sketches of physicians. While these are often interesting in themselves and have reference value, they tend to slow the reader down. He loses sight of the forest for the trees. Finally, however, one emerges where one can see the picture whole in certain concluding chapters on education, quackery, ethics and organized medicine. The study will not only appeal to Texans but will aid in rounding out knowledge of our national medical history.

Color Atlas of Hematology with Brief Clinical Descriptions of Various Diseases. By Roy R. Kracke, M.D., Dean and Professor of Clinical Medicine, Medical College of Alabama, Birmingham Alabama. For Medical Students, Laboratory Technicians and General Practitioners of Medicine, with Clinical and Hematologic Descriptions of Blood Diseases, Including a Section on Terminology, a Section on Technic and a Summary of Blood Findings in Various Diseases. Fabrikoid. Price, $5. Pp. 201, with 35 plates. J. B. Lippincott Co., 227 S. Sixth St., Philadelphia 5, 1947.

This little offspring of Dr. Kracke's well known textbook on Diseases of the Blood is designed for use by medical students, laboratory technicians and general practitioners. It starts with a chapter on the definition of hematologic terms which should be valuable to the beginner. The origin and the morphology of the blood cells are discussed in detail. Well reproduced colored plates should help in the sometimes difficult task of identifying and classifying the various normal and pathologic cell types. Chapters on the evaluation of pathologic findings such as leukocytosis, lymphocytosis, monocytosis, eosinophilia, the various types of anemia and the leukemias follow, all accompanied with characteristic color plates. The composition of the bone marrow in health and disease is discussed. A chapter with pictures of the blood parasites and of the hematologic findings in various laboratory animals can also be found in this little book. After a brief description of the hematologic technics used in the author's laboratory, a summary of the hematologic findings in various diseases and conditions forms the last chapter of this manual. The book will prove its usefulness to the professional persons for whom it is designed. However, the text of the expected second edition should be brought more up to date. For instance, vitamin K, a naphthoquinone derivative, can hardly be defined as the precursor of prothrombin which is a protein; the life span of the erythrocyte is not thirty days but a hundred to a hundred and twenty days, as shown by many recent investigations; plate 33 shows the blood picture of the white rat and the legend reads "no platelets shown since they are scarce"; on the following page the platelets of the rat are listed as numbering 600,000 to 700,000 per cubic millimeter.

La digitale et les strophantines: Pharmacodynamie-thérapeutique. Par D. Danielopolu, professeur de clinique médicale à la Faculté de médecine de Bucarest. Paper. Pp. 206, with 56 illustrations. Masson & Cie, 120 Boulevard Saint-Germain, Paris 6e; Imprimeriile "Independenta," Bucharest, 1946.

This monograph contains a review of the literature together with the author's own work in the field which dates back to the early nineteen hundreds. A consideration of the physiology of the autonomic nervous system in normal and pathologic states is followed by a discussion of the histology and the physiologic properties of the heart and blood vessels, and of their innervation. Then follows a comprehensive review of the literature dealing with the pharmacology of digitalis.

The author's concept regarding the mechanism of the action of digitalis and strophanthus preparations can be summed up as follows: The fact that digitalis drugs act in a manner similar to potassium and acetylcholine on certain properties of the heart and in a manner similar to calcium and epinephrine on others led him to the view that these drugs act to a large extent, but not exclusively, by cholinergic and adrenergic actions, the manner of action depending on whether the drug is acting on the adult (myocardium) or the embryonic (conducting system) tissue of the heart. The usual substances operating adrenergically and cholinergically on the heart influence these two types of tissue in the same manner. Digitalis, however, acts one way on tonicity, excitability and contractility and in a contrary fashion on automaticity and conductivity of the heart. The difference in digitalis action is assumed to be due to a difference in reactivity of embryonic and adult cardiac tissue to the drug. The author also believes that digitalis drugs act in a nonspecific manner via this cholinergic and adrenergic stimulation; this action is reversible. In addition, these drugs have a specific or toxic action which is peculiar for these drugs and is irreversible. The results of animal experiments, as well as those on man, which the author performed, are used to confirm this hypothesis. This theory of the author on digitalis action may appear strange to many readers and requires supportive evidence before it can be accepted.

The last chapter is devoted to a method of resuscitating the heart which he has found effective clinically and in animal experimentation. When cardiac standstill ensues he uses intracardiac injection of a mixture of epinephrine, atropine and strophanthus and at the same time performs massage of the heart through the abdomen and thorax as well as maintaining artificial respiration.

This book should be of value to the investigator as well as to the cardiologist and the internist. The review of the classical literature is excellent, the bibliography is extensive and the author's hypotheses are at least provocative.

Urology in General Practice. By Nelse F. Ockerblad, B.S., M.D., F.A.C.S., Professor of Clinical Urology, University of Kansas School of Medicine, Kansas City, Kansas. Second edition. Cloth. Price, $5.75. Pp. 392, with 98 illustrations. Year Book Publishers, Inc., 304 S. Dearborn St., Chicago 4, 1947.

This practical and readable book, as Dr. Ockerblad says in the preface to the first edition, "is the product of many years of endeavor to teach the specialty of urology to medical students and to interpret it to the profession in general." There are few references to the literature and no bibliography. A book of this size and with the purpose the author had in view would lose a great deal of value and space would be wasted, if controversial matters were treated at length. The danger in this method of presentation lies in the necessary dogmatism of the author, and the inability of others less skilled and intuitive to get equally good results from his methods.

Chapter II covers instrumentation of the urethra and is written with great common sense and from a large experience. Chapter III differentiates between pyelitis and pyelonephritis in a manner not in accord with most modern opinion. The chapter on nephritis and nephrosis is sketchy and vague, and it is questionable whether it should have been included in a book of this type. Many of the therapeutic measures advocated are outmoded and highly questionable. A quotation from the section on the treatment of anuria in which the use of intravenous fluids is discussed says that "when there is complete anuria 5,000-7,000 cc. of fluids may be given (daily) to increase the hydrostatic pressure to the point where the kidneys must secrete (but this must not be continued too long)." Unfortunately there is no point of pressure at which kidneys "must" secrete, and present opinion is to the effect that in anuria only sufficient fluid should be given to replace the fluids lost in perspiration, through the bowel and in respiration; 1,500 cc. in twenty-four hours is sufficient to take care of this loss. More fluid than this will only increase edema of the interstitial tissues of the kidney and may cause cardiac collapse.

Other errors and omissions are on page 130, where diverticulum of the bladder is given as a cause of obstruction at the vesical neck, whereas the consensus is that the opposite is the case; on page 212, where no mention is made of nonobstructive anuria resulting from the use of sulfonamide derivatives; and on page 249, where transurethral resection of the vesical neck is omitted in the treatment of neurogenic dysfunction of the bladder.

The author has opened a major controversy in the section on enuresis. He starts out well enough by stating that the vast majority of these cases are psychogenic in origin. In discussing treatment he says "Flee the psychoanalysts as you would the devil. The mother can furnish her own psychotherapy." How this can be reconciled with the concept that most cases of enuresis are due to a conflict between the child and the mother, and that the best results in treatment are obtained by psychiatrists, is something for the author to ponder.

In spite of the criticisms offered, this book is recommended for its personalized point of view and generally sound teaching.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

CANCER OF BREAST IN PREGNANCY

To the Editor:—A woman aged 40, with 5 living children, has a tumor in the breast. She is six months pregnant. There are no palpable lymph glands in the axilla; x-ray of the chest is negative. Suppose the biopsy should prove the tumor to be cancer; four main points of view are expressed: 1. Do nothing; let the patient have her baby; the case is hopeless anyway. 2. Do a radical mastectomy and a Porro's operation with bilateral ovariectomy. 3. Do a radical mastectomy and let the pregnancy go by. 4. Do a radical mastectomy and in about one month, when the fetus will be viable, do a Porro's operation and bilateral ovariectomy. Will you please discuss this case.

M.D., Ohio.

ANSWER.—This case brings up the problem of mammary carcinoma in the sixth month of pregnancy in a multipara who does not have evidence of metastasis to the axilla or chest.

Since the pregnancy is two-thirds advanced, abortion is of doubtful value. If the tumor had been picked up in the first half of pregnancy, therapeutic abortion would be indicated. Under the circumstances irradiation to the tumor could be given until term and then a radical mastectomy done. Following this castration by irradiation should be considered in order to prevent additional pregnancy and inhibit subsequent spread of the tumor. In a case like this irradiation given preoperatively would reduce the vascularity of the breast and inhibit tumor growth.

NEUROLOGIC SYMPTOMS FOLLOWING INJECTION OF MERCURIAL

To the Editor:—I have been treating a woman who has right and left cardiac decompensation with daily intramuscular mercupurin for two weeks. With this she also received daily oral digitalis. She improved greatly and thereafter I gave her mercupurin once a week for about two weeks. From the beginning she complained of numbness of both legs and feet, which I attributed to loss of fluid; but now she has developed right foot drop. What is the cause of the neurologic symptoms—could it be due to the mercury? Shall I continue the mercury and what shall I do? The blood count is normal.

Edward V. Maggio, M.D., Brooklyn.

ANSWER.—Foot drop can occur with intramuscular injection in the buttocks if the injection is made close to the sciatic nerve. This also could account for numbness of the legs and feet. It is rather unusual to have these symptoms with theophylline containing mercurial diuretics, because permanent tissue damage is not produced by injection such as occurs when theophylline is not combined with mercurial salt. However, if the injection is placed close to the sciatic nerve, symptoms do develop and if the nerve itself is injured foot drop might also occur. If the injection is given intramuscularly it should be given at a site well away from the sciatic nerve or the material could be given intravenously. Storage of mercury occurs to only a slight extent, if at all, with theophylline containing mercurials, so that the neurologic symptoms are probably not due to mercurial poisoning.

OBESITY, DELAYED DENTITION AND UNDESCENDED TESTIS

To the Editor:—A boy aged 10 months weighing 27 pounds (12 Kg.) and 31 inches (79 cm.) tall had a birth weight of 7 pounds 1 ounce (3,200 Gm.) and height of 21 inches (53 cm.). His weight is uniformly distributed. At 2 months of age he developed an acute right hydrocele, which diminished in a few days, becoming bilateral at 2½ months and disappearing at the age of 6 months. He is alert and active. The penis and scrotum are small. There is a tiny left testis in the scrotum. The right testis is not palpable anywhere. Teeth have not erupted. I have been considering the use of thyroid by mouth and testosterone by injection. What treatment, at what age, is advisable for his combination of obesity, delayed dentition and underdeveloped sex organs?

Leon Paris, M.D., New York.

ANSWER.—The query does not state whether this infant received vitamin D in any form. Lack of vitamin D can certainly retard dentition, and adequate amounts of this vitamin should be supplied to every infant. Unless hypothyroidism or mild cretinism is diagnosed by the aid of x-rays of the bones of the wrist, thyroid medication does not seem indicated.

If the right testicle has not descended into the scrotum by the age of 11 or 12 years, endocrine therapy and surgery may be contemplated.

FREQUENCY OF ELECTROENCEPHALOGRAPHIC ABNORMALITIES IN EPILEPSY

To the Editor:—If in all cases the electroencephalogram reveals characteristic changes in the potential or "brain wave" in epileptic patients, what percentage of cases on encephalographic study show outlines to be abnormal or essentially normal, if any?

M.D., Texas.

ANSWER.—Seizure discharges are the only abnormality truly characteristic of epilepsy. The finding of such discharges suggest epilepsy or a strong epileptic diathesis. The percentage of epileptic patients showing seizure discharges varies with the general severity and the type of epilepsy under consideration. In a random sample of 1,000 outpatient epileptic patients routine waking electroencephalograms revealed 30 per cent with seizure discharges. However, 22 per cent had exceedingly slow or fast electrocardiograms, which are suggestive of epilepsy or related organic disorder. Recent studies have shown that during sleep seizure discharges occur in 85 per cent of epileptic patients and in less than 1 per cent of controls. Therefore sleep greatly increases the diagnostic power of the electroencephalogram. However, sleep studies are not ordinarily called for unless the waking record is found to be normal or only slightly abnormal.

PATHWAY OF REFLEX FROM BURNING HAND

To the Editor:—What explanation is given when a hand unconsciously touches a hot stove and the hand is pulled back quickly? Am I right? The nerve impulse from the hand goes to the cord center and is reflexed back to the hand; hence the quick pulling back of the hand. From the cord center the message goes to the brain. Then the brain sends a message to the hand that it has been burned, and hence the pain. If not correct please send explanation.

J. Louis Waldner, M.D., Loveland, Colo.

ANSWER.—The correspondent is entirely correct that in a normal person when a hand unconsciously touches a hot stove the hand is pulled back or away from the stove immediately. This is a reflex phenomenon and it occurs almost instantaneously. The pathway for this is as follows: the fast pain fibers in the skin are stimulated by the hot stove, and the impulse travels up the peripheral nerve, the posterior spinal ganglions, the posterior root into the small myelinated and unmyelinated fibers in the substantia gelatinosa of the posterior horns. From here the neurons arising in the posterior horn cross the midline of the spinal cord into the anterior horns and then into the ascending spinothalamic tract. From here the fibers finally end in the lateral nucleus of the optic thalamus. The reason for the rapid pulling back of the hand is that the movement is one of a reflex nature, i. e. the hand is pulled away because of the rapid effect the stimulus has on the anterior horn cells. All during this time, even though it is only a second or two, the stimulus of the heat has reached the thalamus and cerebral cortex, i. e. both posterior central and precentral gyri.

FATTY ACIDS AND DERMATITIS

To the Editor:—What are the common foods that contain linolenic and arachidonic acid? What is the best method for administering the unsaturated fatty acids other than in foods or drugs? Please furnish recent references in the uses of these acids in eczematoid and atopic dermatosis.

Irwin I. Lubowe, M.D., New York

ANSWER.—The work of the Burrs (*J. Biol. Chem.* **88:**349 [May] 1929) has shown that the most essential fatty acid is arachidonic acid, but linoleic and linolenic acids are also important in fat deficiency diseases. This, however, was based on animal experiments. Other observers, such as A. E. Hansen (Serum Lipids in Eczema and in Other Pathologic Conditions, *Am. J. Dis. Child* **53:**933 [April] 1937), Faber and Roberts (*J. Pediat.* **6:**490 [April] 1935) and Finnerud, Kesler and Wiese (Ingestion of Lard in the Treatment of Eczema and Allied Dermatoses, *Arch. Dermat. & Syph.* **44:**849 [Nov.] 1941) found that the degree of unsaturation of the serum lipids tends to be low in patients with dermatitis. Cornbleet (Use of Maize Oil in the Treatment of Eczema, *ibid.* **31:**224 [Feb.] 1935) also found that patients with certain types of dermatitis were benefited by diet high in unsaturated fatty acids.

Stoesser (*J. Allergy* **18:**29 [Jan.] 1947) has described the influence of soy bean products on the iodine number of the plasma lipids and the course of eczema. He has shown that infants with severe eczema had an iodine number averaging 71, which is much below normal. However, after three or more weeks of ingestion of the soy bean milk the values rose until an average of 118 was reached, which is within normal range. This situation was associated with a favorable response to external therapy. The simplest method of administering linoleic and arachidonic acid is by the administration of soybean lecithin. This can be given to children as a milk substitute or to adults as soybean lecithin directly. It is not practical in most instances, especially since food sensitivities enter the picture, to attempt to give sufficient of these acids by means of food alone.

EFFECT OF FLUORIDES IN DRINKING WATER ON TEETH

To the Editor:—Following is an analysis of the Myrtle Beach water supply (fluorine 4 to 5 parts per million). Most of the inhabitants have dental fluorosis. When should an expectant mother begin drinking water from other sources, considering that only the permanent teeth are to be protected for fluorosis? When should she start, considering that both deciduous and permanent teeth are to be protected?

	Parts per Million
Color	10.00
Chloride	94.00
Alkalinity	540.00
Free carbonate	0.00
Hardness	0.00
Total solids	832.00
*p*H	8.3
Fluorine	4 to 5

G. P. Joseph, M.D , Myrtle Beach, South Carolina.

ANSWER.—As all permanent teeth are calcified after birth, the fluoride content of the domestic water used by the mother during gestation is immaterial. The slight signs of dental fluorosis occasionally seen on deciduous teeth are insignificant and are not sufficiently important to warrant corrective measures.

With respect to the permanent teeth, however, the picture is entirely different. The continuous use from birth of a domestic water containing the fluoride concentration mentioned can be expected to produce endemic dental fluorosis in about 90 per cent of the users. Much of the dental fluorosis produced by using a water of this concentration is of a disfiguring type.

To protect the child from developing dental fluorosis in the permanent teeth, the water used for both drinking and cooking during the first eight years of life should not contain fluorides (F) in excess of 1 part per million. This procedure will protect all permanent teeth with the exception of the third molars. If the latter are to be protected these prophylactic measures must be extended to the sixteenth year

HYDROLYZED AND UNHYDROLYZED PROTEINS ORALLY

To the Editor:—In what specific clinical conditions are protein hydrolysates superior to unhydrolyzed protein for oral feeding? In diarrhea or intestinal fistulas is the body able to absorb more amino acid from hydrolysates than from unhydrolyzed proteins given orally? For clinical purposes is lactalbumin superior to casein for supplementary oral protein feeding?

M.D., Florida.

ANSWER.—A categorical reply to the first question is not possible, since experts are not yet agreed as to whether protein hydrolysates are to be considered superior to purified whole protein for oral feeding in any condition. Elman feels that the oral use of hydrolysates permits the assimilation of much larger daily amounts of protein nourishment than seems possible when whole protein is given (Elman, Robert: *Am. J. Digest. Dis.* **10**:48 [Feb.] 1943). Kozoll, on the other hand, finds that patients cannot take many of the available oral hydrolysates because of unpalatability. Hence they must be given by gavage, which is uncomfortable and time consuming. Large amounts of protein hydrolysates taken orally frequently lead to troublesome diarrhea. Kozoll feels that ideal high protein therapy for patients able to take food by mouth is the oral administration of a palatable, easily digested protein or protein derivative susceptible of being incorporated in large quantities in the common foods (Kozoll, D. D.; Hoffman, W. S.; Meyer, K. A., and Garvin, Thelma: High Protein Therapy, *Arch. Surg.* **53**:683 [Dec.] 1946).

Theoretically, hydrolyzed protein should be assimilated more completely than unhydrolyzed protein by patients with diarrhea or intestinal fistula. Satisfactory experiments have not been performed to prove this point, and it may be more theoretical than real, particularly in view of the fact that hydrolysates themselves may produce a diarrhea.

As far as is known, lactalbumin and casein are nutritionally comparable and any differences between them are not significant from the standpoint of human therapy. More important is the manner in which the hydrolysate is produced and the actual nutritional value of the finished product as compared to the protein from which it was derived. This can be determined only by actual test.

HAZARDS OF MERCURY BICHLORIDE

To the Editor:—What is the minimum daily dosage of mercury bichloride. Will it make a difference whether it is taken orally or applied externally? What are the signs and symptoms of chronic mercurial poisoning? I have been using a hair tonic preparation with bichloride in it for the past year and a half.

Lieutenant, M. C., U. S. Army.

ANSWER.—It has been estimated that the continued absorption of 5 mg. of mercury daily in the form of its ionized salts, which would include the bichloride, may be just on the borderline of being deleterious. Compared to the other routes of entry of mercury into the organism, the cutaneous one is relatively unimportant. Laboratory experimentation has shown that under the most favorable conditions for cutaneous absorption the application of approximately 80 mg. of mercury as calomel to 8 per cent of the body surface of animals results in an absorption of the order of 0.1 per cent, or 0.08 mg. of mercury. While it may be assumed that mercury bichloride would behave similarly, it is believed that the conditions of exposure on the scalp would be much less favorable to absorption. Analysis of the urine is the best means for evaluating exposure to mercury. The excretion of 0.1 mg. daily indicates active absorption. Long-continued exposure to relatively small doses of mercury may lead to slow and insidious development of chronic poisoning. Some of the symptoms are fine intention tremors, psychic irritability, restlessness, nutritional disturbances, stomatitis and renal irritation.

PERCEPTIVE DEAFNESS AND ALLERGY

To the Editor:—I should appreciate information on the possible relationship of allergy (nasal and general) to a moderately severe perceptive bilateral deafness.

Francis E. Gilfoy, Major, M. C., U. S. Army.

[This query was referred to an otologist and to an allergist, whose respective replies follow.—EDITOR.]

ANSWER.—The following diagnostic criteria are the chief characteristic features of bilateral perceptive deafness of allergic etiology: 1. The degree of deafness tends to fluctuate. 2. There may be as much loss for the low tones as there is for the medium or high tones on audiometric examination, if not more. 3. If the loss is much greater for one ear than for the other, the ear with the greater loss may have diplacusis. 4. Improvement in the deafness by eliminating the offending allergen and reproducing the deafness after reexposure constitutes final proof of the allergic nature of the deafness. 5. If the deafness is associated with attacks of vertigo and tinnitus of varying intensity the symptom complex is known as Ménière's syndrome. While there are occasionally cases of perceptive deafness due to an underlying allergy, they are comparatively rare as compared to the total number of cases of impaired hearing of the perceptive type.

ANSWER.—It seems best to answer this inquiry on the basis of Ménière's syndrome, in which deafness, tinnitus and vertigo form the characteristic triad. In 1923 Duke described 5 cases of Ménière's syndrome caused by allergy; later Dean, Agar and Lenton and finally Jones called attention to the fact that allergy does affect the eustachian tube, the middle ear and the internal ear, even though scientific proof is lacking. Granstroem and Nylen stress the importance of allergy in the etiology of Ménière's syndrome. Thornwall and Crowe, however, could not find allergy as a cause of this syndrome. Brunner's review of the literature is all inclusive.

ADMINISTRATION OF IODIDES TO AID DIAGNOSIS OF PULMONARY TUBERCULOSIS

To the Editor:—Is a physician justified in administering iodides to establish a diagnosis in suspected pulmonary tuberculosis when all other diagnostic procedures have been negative.

M.D., Louisiana.

ANSWER.—Administration of iodides to aid in establishing a diagnosis in suspected pulmonary tuberculosis was at one time practiced extensively. When a pulmonary lesion was found but tubercle bacilli were not recovered from the sputum, large doses of iodides were administered, following which, in some cases, organisms were found in the sputum. It was thought that iodides destroy fibrous tissue in the lesion and liberate the bacilli. Therefore this procedure fell into disrepute because of the assumed danger of reactivating tuberculous lesions. Hence physicians abstained from administering iodides even for other purposes in cases of tuberculosis with well established diagnoses as well as in suspected cases. A careful review of the literature has not revealed the report of any scientific study to prove that iodides have a deleterious effect on tuberculous lesions. Apparently the numerous statements to the effect that iodides are harmful in tuberculosis were based entirely on opinion. Gross syphilitic lesions were seen to vanish under iodide therapy, and apparently it was assumed that the fibrous tissue of tuberculous lesions would be destroyed under the same treatment. Iodides may increase and liquefy secretions in the bronchial tree. Therefore it is probable that when they were used in the diagnosis of tuberculosis they only liberated mucus and other material from the region of the lesions which contained tubercle bacilli.

While apparently there is no proof that iodides are harmful in either suspected or well established tuberculosis, they are now almost never administered as a diagnostic aid. Other far more effective methods have superseded this procedure. If the patient in question does not react to tuberculin, properly administered intracutaneously and in sufficient dosage, it is certain that tuberculosis is not present. If he does present a characteristic reaction it is not definite proof that the lesion in question is tuberculous, since tuberculin reactors develop nontuberculous lesions as readily as nonreactors. If a characteristic tuberculin reaction has been demonstrated and sputum does not contain acid-fast bacilli, gastric washings should be carefully examined for them. These washings are best obtained by having the patient drink a glass of water before eating or arising in the morning. A few minutes later this is removed by a small stomach or duodenal tube and studied immediately; that is, the washings should be digested and concentrated promptly after removal and planted on culture medium or, preferably, inoculated into *guinea pigs*. If tubercle bacilli are not recovered from sputum or gastric washings, there is little likelihood that the administration of iodides will be helpful.

POSSIBLE EPILEPTIC SEIZURES

To the Editor:—A girl aged 9 years has had spells of amnesia for the past three months lasting from a few hours to a full day. She is in perfect health otherwise, which has been verified by three physicians, one a psychiatrist. She attends school regularly, is bright, plays every day, rides a bike, hikes, goes to the movies, sleeps and eats well, and all of a sudden becomes quiet, dazed, listless, has that far away look in her eyes, doesn't remember anything and answers questions that do not seem to register. After a spell she is herself again, a different child, and then asks her mother what was the matter with her. From this brief history what do you think might be the diagnosis?

M.D., Pennsylvania.

Answer.—Presumably the child is having epileptic seizures, either a prolonged psychomotor attack or periods of petit mal status. An electroencephalogram will probably distinguish which. Differentiation is important for prescription of medication, diphenylhydantoin sodium being used for the first and tridione for the second condition.

BLOOD TYPE AND PENICILLIN FAILURES

To the Editor:—Has any study of the relationship of blood type to effectiveness of therapy with penicillin or sulfonamides been made? It has been called to my attention by a chief pharmacist's mate that in his experience men with type A blood do not respond well to penicillin therapy. At the present time I have three penicillin and sulfonamide resistant gonorrheal infections under observation and therapy. Probably coincidentally, all are in patients with type A blood.

M.D., U. S. Navy.

Answer.—There is no evidence in the literature that penicillin failures are more common in patients with group A blood. In the case of gonorrhea it has been shown that many patients who were thought to be resistant to penicillin are really victims of reinfection during treatment. The prevention of sexual congress while the patient is undergoing treatment is one of the ways of determining whether a patient is resistant to a fixed dose of penicillin.

RELAPSING MALARIA

To the Editor:—A veteran from the South Seas has recurrent malaria. Quinine gives only temporary relief. What drugs can do more and where are they available?

R. W. Hartwell, M.D., Beaumont, Calif.

Answer.—There are many servicemen who continue to have frequent attacks of relapsing malaria, and treatment with either quinine or quinacrine serves only to cure each acute episode but does not prevent the recurrence of the malarial infection at a later date.

There is a new drug on the market known as chloroquine which, if taken in the dosage of 0.3 Gm. weekly, will suppress almost all clinical manifestations of this infection, although, like quinacrine and quinine, it will not cure.

UNDESCENDED TESTES AND FREQUENCY OF HERNIA

To the Editor:—Are there any statistics available on the incidence of inguinal hernia in the presence of an undescended testis, that is, is the incidence of such hernia the same regardless of whether the testis is descended or not, or is it higher when the testis is undescended? If such an incidence is higher, is it influenced by a partial descent of the testis which can be palpated but which has not descended into the scrotum?

Walter E. Fleischer, M.D., Baltimore.

Answer.—The incidence of hernia is a great deal higher in the presence of an undescended testis than when the testis has normally descended. This is particularly true in cases in which there is partial descent of the testis which lies within the inguinal canal, because with the testis in the inguinal canal it is impossible, of course, for the processus vaginalis to become obliterated. As most of the undescended testes are only partially undescended, it is justifiable to assume that every undescended testis is associated with a hernia.

TESTS FOR PORPHYRINURIA

To the Editor:—Concerning a test for porphyrinuria (The Journal, July 12, 1947, p. 986), your reply gave an excellent presumptive test for porphobilinogen but evaded the question regarding porphyrin. The reply might have advised tests devised for several levels of porphyrin excretion. Thus for normal or slightly elevated excretion, take an aliquot (100-250 cc.) of a twenty-four hour specimen (thymol preservative), add ¼ volume of acetic acid, shake out two times with an equal volume of ether, wash once with water, take out with 5 to 10 cc. of 2 normal hydrochloric acid and measure the red fluorescence intensity in a fluorophotometer. There will always be some red fluorescence. For larger amounts of porphyrin, a qualitative test consists in shaking out the ether extract, as prepared, with concentrated hydrochloric acid and carefully adding 3 per cent hydrogen peroxide. A transient green color due to chloroporphyrin hydrochloride is seen only with pathologic quantities of porphyrin. For uroporphyrin, characteristic of porphyria, it often suffices merely to add hydrochloric acid to the urine and to examine the urine under an ultraviolet lamp (better Wood's light) to observe the intense red fluorescence. In case much porphyrin is present, first add acetic acid, then extract two to five times with ether and shake with talcum, filtering off over a column of talcum in a glass tube. Wash with water, then with ammonium hydroxide. A red fluorescence in the eluate is presumptive evidence of the presence of uroporphyrin. The diagnosis of porphyria cannot be entertained unless the subject is of dark complexion.

William J. Turner, M.D., Veterans Administration Hospital, Northport, N. Y.

OPEN VERSUS CLOSED TREATMENT OF FRACTURES

To the Editor:—The reply in Queries and Minor Notes to Dr. Forrest's query in The Journal July 19, 1947, page 1058, seems to leave the whole matter of immediate accurate reduction and subsequent immobilization of fractures in too much confusion, just as so many of our textbooks on the treatment of fractures do. The point that I have been making with regard to the accurate approximation of fracture fragments, whether by direct fixation (open operation) or by indirect fixation with pins and plaster of paris casts, is that they heal better and more rapidly than fractures that are inadequately reduced or immobilized. There is also in compound fractures the additional advantage that the patient is better able to resist wound complications and infection than if the limb is left to any degree in poor position. It has been proved in my practice hundreds of times that with the bone fragments, lymph channels, circulation and nerve supply all in normal position the physiology of the limb is better, resistance to infection is better, and healing takes place more rapidly.

A defect in Dr. Forrest's question and in your reply is one common to many discussions of fracture treatment. One must think not only of the fracture fragments, but of the limb as a whole and of the patient. Another point is that in some open reductions, excellent otherwise, too much surgical trauma or operative infection militates against a good result.

H. Winnett Orr, M.D., Lincoln, Neb.

POSTCOITAL HEADACHE AND LOSS OF MEMORY

To the Editor:—In The Journal June 7, 1947, page 563, both the question and the answer on this subject failed to bring out the cardinal points. It is necessary for a better understanding for the patient's physician to consult with urologists and internists as well as with psychiatrists. Urologic experience proves that patients apparently mentally normal otherwise will deliberately deceive their doctor about their drinks, smokes and venery. I can recall several patients in my practice who have symptoms of headache following coitus who were promptly cured by such simple urologic treatments as (1) prostatic massage for a case of chronic prostatitis and (2) passing of steel urethral sounds in a case of multiple small penile old Neisserian urethral strictures. I recall other persons who were promptly cured by ceasing to withdraw to avoid pregnancy and another who was also cured when advised to stop using condoms for contraceptive purposes. The former cited cases were undoubtedly urologic, whereas the latter two were probably largely psychic. My advice to this inquirer is to seek the consultation of a good urologist. It is always necessary to find the cause; apparently the basis of this patient's trouble is urologic.

Paul R. Stalnaker, M.D., Capt. (MC), U.S.N. (Retired), Houston, Texas.

The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

Vol. 135, No. 7 — Chicago, Illinois — October 18, 1947

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THE NEUROLOGIST LOOKS AT DISCIPLINE

Chairman's Address

ROLAND P. MACKAY, M.D.
Chicago

The neurologist, like every other man, must be his own philosopher, must step back and survey his daily life and work and consider their meaning and implication for the world around him No serious and candid man, least of all the neurologist, can ignore the varying human scene or fail to consider it in the light of his special knowledge and training. The problem of democracy—how man can live in peace and good will on a crowded and shrinking planet—demands solution. The problem of the individual—how man can live in happiness with himself—is to be resolved. It has been said that ours is a uniquely neurotic time in history.[1] Whether this be true or not, ours is indeed an age of unreason,[2] with its conflict and bitterness, its fears and hatreds in peace, even greater than in war, its starvation amid plenty, its keen personal discontents.

Often immured in his hospital or clinic, the neurologist is nevertheless conscious of these matters and has something to contribute to their solution. He knows that the nervous system is the organ of civilization, that the facts regarding higher neurologic integration are pertinent to our social and personal dilemma. He is equipped by his background and education to study the formation of human character and, unlike some of his scientific friends, to approach without mysticism the genesis of human personality and its deformities, the neuroses. He must speak his mind.

Now, while the neurologist makes no pretense to a comprehensive solution of the ills of mankind, he does know that the great trouble with the world lies in the perversity and contrariety of human behavior. He can testify, further, that these perversities arise not from intellectual but from emotional forces in the individual. Virtue is not born of knowledge, nor vice of ignorance. In the words of Shakespeare: "If to do were as easy as to know what were good to do, chapels had been churches, and poor men's cottages princes' palaces." The determinative emotional forces in behavior are compounded out of the original self-preservative and race-preservative impulses of the individual. If they are deformed into patterns of fear and hatred and aggression, it is not in formal education, but in the complex personal impact of parent and society on the child.

Thus, our first principle is that of Wordsworth: "The child is father of the man." This is not new, but it is just as true as if it were the latest discovery of atomic science. If man is unhappy and perverse, if he entangles himself in his own conflicting desires, if by some vicious alchemy he transmutes his love into hate, if he persistently seeks satisfaction in his own destruction, if he paralyzes himself with his doubts and indecisions, if he is unable to sacrifice an immediate and spurious advantage for a great ideal, if, in short, he stubbornly strives to gain the whole world but loses his own soul, it is because in childhood he has been molded to futility by his parents and by society. If the behavior of the individual and of society is "neurotic," that fact can only mean that the training of the youth has been a failure. The prevention of such behavior (for "cure" is difficult and uncertain) can only be achieved by a study of childhood and its discipline.

Fortunately, we are no longer dependent on empiric systems such as theology, sociology, armchair philosophy or even couch psychoanalysis for our understanding of the processes of learning and the establishment of the neuroses. Instructive as these systems have been, some founded on long ages of human experience, they have produced only a discordant babel of strident voices. Witness the "to spank or not to spank" controversies, the doctrines of "self expression" and the puerile debates over the weaning and feeding of babies, the waywardness of youth and sex education, both in and out of schools. Leaving aside such confusing counsel, one may turn instead to a body of carefully controlled experimental evidence on the formation of habit and the production of the neuroses in animals. Limited though these data at present are, they represent the early fruit of our first objective approach to the molding of character and to its distortions, the neuroses. At last a little experimental evidence is available, free of the suppositions and mysticism of centuries of superstition, not yet at an end.

As the reflex arc is the physiologic unit of the nervous system, so the conditioned reflex is the physiologic unit of character. From the work of Pavlov and many others we have learned some of the laws by which original or instinctive responses expand and flower into the complicated "acquired" behavior of the organism. These laws are so constant and verifiable that they must apply with equal force to the human being, albeit in greater complexity. What is even more important, we have learned some of the circumstances in which neuroses may be experimentally produced in an animal during the establishment of conditioned

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From the Department of Neurology and Neurological Surgery, The University of Illinois College of Medicine, and from St. Luke's Hospital, Chicago.

Read before the Section on Nervous and Mental Diseases at the Ninety-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., June 13, 1947.

[1] Lundberg, F., and Farnham, M. F.: Modern Woman: The Lost Sex, New York, Harper & Brothers, 1947.

[2] Alexander, F.: Our Age of Unreason, Philadelphia, J. B. Lippincott & Company, 1942.

reflexes—neuroses which exhibit in simple form many of the characteristics of the human neuroses.[3] Many of the laws governing these processes are well known and cannot be ignored in any theory of human behavior.

It is the purpose of this discussion to examine a few of these principles and to apply them to the problem of the discipline of children. One fact, as it were an axiom, is essential to our discussion: viz., that it makes a great difference whether and how we discipline our children. It is strange, but there are those who still hold to a doctrine of "maturation"—the theory that children simply mature into well adjusted adults if left alone, the process by which Topsy "just growed." This hypothesis, perhaps attributable in part to John Dewey, may hold for bees but certainly not for boys and girls. For if the intellectual heritage of civilized man must be carefully and diligently offered to the young in formal schooling, surely the more subtle and fundamental traits of character must be as carefully fostered. To allow a child to acquire his character by "maturation" is simply to let him acquire it by the fortuitous impact of events. Such a policy, admittedly followed by many parents today, is the apotheosis of neglect. If one must train a good hunting dog not to devour the bird he retrieves, how can one escape training a boy to be an honest and charitable and tolerant man?

THE OBJECTIVE

For the establishment of conditioned reflexes in an animal, there must be a definite objective. One must, in short, have something to teach—a set of reflexes to establish. This is no less true in the training of children. Modern parents fail oftenest here. Living an emotionally hand to mouth existence themselves, believing consciously in nothing beyond a materialistic opportunism, many deal with their children opportunistically, as the emotion of the moment dictates, for their own comfort and convenience. Such parents are captious, by turns demanding and lenient, having no major principles of life for the government of their own prejudices and whims. Such a policy is indeed the abdication of parenthood. If our civilization has any standards by which it lives, any qualities which in an earlier day were called spiritual, these standards and these qualities must be transmitted to our successors, or our culture dies. Our society has a body of ethic, carved laboriously out of the ages of human experience, and this ethic, certainly not static, certainly under constant evolution, is nevertheless fundamental. It includes honesty, the love of truth, devotion to duty, loyalty, courage, diligence, unselfishness, respect for just authority and tolerance and concern for the rights of others, which is the soul of democracy. These virtues, perhaps "old fashioned" in our modern acquisitive and amoral times, are merely examples, by no means all inclusive, of the character traits, of the "conditioned reflexes," which are available for the rearing of our children. They are a few of the virtues underlying emotional maturity, underlying a gracious and tolerant civilization. To fail to impart them is to abandon our children to a poverty of great ideals and a preoccupation with self which lie at the root of our personal and social neuroses.

Given such a heritage of virtues, what can we say about the rules of their transmission to the young? What can we say about discipline?

LOVE AND HOSTILITY

For the establishment of conditioned reflexes a friendly environment is essential. Affection and kindliness toward the animal are indispensable. Every laboratory worker knows this to be true. And for the successful rearing of children, love is the prime essential. It is the great unconditioned stimulus on which is based the whole training of the child. In modern life children are often unwanted and receive much hostility from their parents. Once an economic asset, children are now for many an impediment in the struggle for material advancement. Particularly for their mothers, "emancipated" from much of their former sacrifice of time and effort for their children, seeking personal significance in a harshly competitive world, and fleeing into narcissism, babies represent a handicap.[1] Women no longer derive prestige from motherhood as they once did. A woman with more than two children is too often commiserated with or looked on as slightly stupid by her less fecund sisters. For their fathers, children mean less financial savings, less luxury, less golf, less time for their own pursuits. Children tend to lock the door of escape from marriage in a world of promiscuity and divorce. Furthermore, the husband is adversely affected by the discontents of his wife who, despite her "emancipation," considers herself a "drudge" because of their children. In this age of the all but unobtainable "sitter," both mother and father find their pleasures limited by their children.

Whatever the reasons, children are too often secretly or openly hated by their parents; they are therefore neglected, ignored or subjected to a suffocating tyranny of restrictions only thinly disguised as parental concern. The selfish tycoon of business, the harried professional man who must spend his evenings with his work or his books, the playboy who cannot renounce his night club, have no more time for their children than the social-climbing mother, who is more afraid of "dishpan hands" than of neglected children. Thus hostility colors every parent-child relationship, and is immediately sensed, even by the infant.

The results are promptly evident. The child responds to hostility with hostility and fear. Such ideals as the parents have to give are at once rejected. Worse, the neglected, unloved youngster learns to regard the world as an unfriendly place, grows ever more hungry for affection and attention and responds with fear under a sense of insecurity. Fear attaches itself to whatever objects, persons or events may be present; undesirable conditioned reflexes are established apace. The child's attitude toward his hostile and neglectful parents disturbs his relationships with both the same and the opposite sex and insures the frustration of his sexual adjustments. In such emotionally charged circumstances, no proper training of the child can occur, and his character is warped and distorted.

One sociologic fact suggests a partial remedy for this regrettable situation: No one who does not want children need have them. Contraceptive measures, whether by rubber or by the ecclesiastic calendar, insure that parenthood may be voluntary. Perhaps we see the dawn of the day when only the lovers of children will beget them.

EXAMPLE

Such parents, loving their children, must set an example of the virtues which they would impart. Their children, welcome and secure in a friendly environment, will imitate the virtues which their parents exhibit. It

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3. Masserman, J.: Principles of Dynamic Psychiatry, Philadelphia, W. B. Saunders Company, 1946.

is well known that an untrained animal, placed with one already possessing complicated learned reactions, will become conditioned more rapidly than if alone. And any father knows full well the power of imitation over a small son who is loved. Thus a truthful, kindly, self-controlled, scrupulously fair parent has a son, provided that he love him, who is truthful, kindly, self controlled and fair. Thus a mother who keeps her home in careful order will have a daughter, if love be present, who soon comes to hang up her clothes and make her bed and who eventually keeps an orderly mind.

REWARD AND PUNISHMENT

Reward and punishment determine all behavior patterns. The random movements of the infant which bring gratification are facilitated; those which fail or bring distress are inhibited. The rat solves the maze because only when he follows the correct path does he get the cheese. The boy masters the bicycle because only the correct movements give the exhilarating ride. False moves bring disaster. Thus do motor skills evolve through survival of the fittest acts. The key is gratification in return for the correct response. The corollary is punishment for error.

Skills in human relations grow under the same law. A successful personal contact is one which brings approval and admiration; an unsuccessful one brings dislike and hostility. It would seem that the complex interactions of social life develop from an elaboration and subdivision of this simple formula.

It is the province of parents and society to utilize reward and punishment to build into the child those virtues which they cherish. Every child is entitled to feel important or essential, to have his behavior approved and admired, and to be loved, but, so far as lies in their power, parents and society must accord these gratifications in return for virtuous behavior. To allow a child to obtain such rewards by indirection, subterfuge and falsehood, or by playing one parent against another, is to establish habits of deceit and dishonesty. Other vices may be similarly inculcated by similar tactics.

In order to receive the approval and admiration of his parents, every child should have what is often difficult to supply in modern urban life: tasks to perform in the home which are of value to the household and which, when well performed, earn for him the sense of a job well done. Thus he learns to feel necessary and valuable. Thus he sees illustrated early in his life the oft forgotten axioms that benefits must be earned and that it is shameful to have one's load carried by another. Furthermore, when useful work is required of each child he has the opportunity to learn what is one of the great lessons of life—that achievement, the successful accomplishment of a task, requires a prompt attack and the persistent application of one's best efforts until the work is finished. Promptness, diligence and thoroughness should be demanded by the parents as the price of their commendation.

It is of superlative importance that admiration and approval be awarded, not to the person of the child, but to his handiwork. Whether his virtue be the telling of the truth, the able performance of a duty, the exhibition of tolerance, or any other excellence, it should be the deed, not the child, which receives the praise. Thus one may avoid establishing the narcissistic self absorption which is at the root of much neurosis. Thus the child may learn to take his delight in his achievement rather than in himself. Thus may be fostered the urge to do well rather than to be personally admired. In this way perhaps undue personal attachments to one or the other parent may be avoided, with their attendant disturbance in his psychosexual development.

The problem of punishment is often more difficult than that of reward. One should allow, if possible, the penalty to follow a misdeed naturally. This means that the advantage sought through the misdeed must be withheld. Play won by neglect of a duty must be forbidden. The fruits of deception and falsehood must be denied. Not infrequently, no deprivation can be used, and corporal punishment must be applied, particularly in the very young, for whom more abstract punishments have little meaning. But the manner in which a child is spanked is of greatest importance. To lash out in anger makes the punishment but a form of assault. The parent's position here is difficult, for he must be both accuser and judge. It is only with scrupulous justice and fairness, and avoidance of hostility to the child, that he can impose punishment as the regrettable verdict of impersonal law. Far from being an insincere pretense, the old, oft ridiculed statement, "This hurts me more than it does you," is an exact expression of the feelings of a conscientious and affectionate parent. One must "hate the sin while loving the sinner."

The truth is that spanking has fallen into disrepute because of its abuse by vengeful and guilty parents who project their own guilt onto the child. What lazy father can spank a lazy son except in anger? What untruthful mother can punish her little girl for a lie unless in hostility? Thus, only the pure in heart should spank a child. With this reservation, and with the further proviso that after the punishment the penalty be considered as paid and the child be reaccepted in good favor, corporal punishment, as an isolated event, is infinitely preferable to the constant nagging and belaboring which, to a practical youngster, soon come to mean nothing but hostility.

CONSISTENCY

Conditioned reflexes cannot be established unless the stimuli remain constant. To impose one set of restrictions today and another tomorrow is to achieve no results. The intelligent child, so handled, is confused rapidly becomes intolerant of any deprivation or punishment and shows understandable fear and hostility toward so capricious an authority. Such circumstances produce neuroses in animals; it seems reasonable that they do also in the human being. It is as if a child had to learn to walk under laws of mechanics which changed from day to day. With these facts in mind, it is obvious that the rules of behavior should be mild and kindly enough to be enforced regularly and consistently. To forgive a child for lying is to teach him to lie. To punish cruelty and injustice one day and condone them the next is to teach cruelty and injustice.

If two experimenters are working with the same animal, they must follow the same rules. In the training of children there are normally two (and sometimes more than two) experimenters. The possibilities of inconsistency are thus almost limitless. Standards imposed by one parent may not be required by the other, and when the parents agree the grandmother may, and often does, disagree. When two parents are mutually hostile and compete for the favor of the child, or when they dispute his discipline in his presence, he learns quickly enough to play one against the other.

In the end he becomes a dissimulator, operating in fear and hatred, holding all authority in suspicion and contempt. He learns to get his way by cynical diplomacy. Such a child, doomed always to ignorance of the law and finding the authority of the home divided, never achieves a sense of security. For him the domestic world is an unfriendly and arbitrary place, where reward and punishment are scarcely to be distinguished. Thus, it is ideal for parents to have similar cultural, ethical and philosophic backgrounds. When they nevertheless disagree, the child must be shielded from their words of disagreement.

PARENT AND SOCIETY

Finally, we must remember that parents, vouchsafed the first word with the child, do not have the only word, or the last. The unit of society today is scarcely the home, poor and forsaken thing that it is, but rather the community of associates among which each person moves. Often the home is little more than the point of departure from which young and old leave for their several amusements. Our contacts with our children are thus progressively reduced almost to the vanishing point. Other parents who, for their ease and convenience, allow their children to grow without guidance, compete with us in influence over our offspring. Our neighbors' children, bringing the ideas and ideals of their own circles, play a great role in the shaping of the concepts and philosophy of our young ones. Besides the impact of their own opinions and behavior, they begin by taking our children with them to the motion pictures, continue by inviting them to the dance hall and eventually lead them to the night club and the tavern.

In this frenetic and commercial age, not only our children but all of us are wooed by a host of forces answerable only to the desire for profit. Whatever their wares may be, from soap to sentiment, they stimulate and appeal to every instinctive and primitive need, if only we will buy. Thus we—children and all—are constantly drawn toward ethical and philosophic sensualism.

For example, consider the influence of the motion picture in the decay of esthetics and in the decline of morals. Witness the cultivation of the garish and the ostentatious, the vulgarization of feminine beauty, the constant disparagement of hard work in favor of smart subterfuge or outright banditry and the routine use of wealth as a measure of success. As for sex, various degrees of seduction in polychrome instruct the fantasy of the boys and girls who sit in mutual proximity in a merciful darkness. The motion picture is the greatest "educator" of all time, with its vivid sensory impact, its emotional dynamics and its mass appeal. How can parents equal or combat such tutorial efficiency?

But this, though much, is not all. How can a parent compete with the unwearied radio, with its perpetual vaudeville, its spine-tingling murders, its mawkish sentimentality, its passionate commercialism? How can a parent protcet his child from the daily parade of criminal and sexual psychopathology in the newspapers, repeating in every edition the edifying story, for example, of how a little girl was dismembered and scattered over a city? Or protect them from the saltier details of Hollywood's decadency? Or from stupid comic books, for that matter?

The answer is not forthcoming. Perhaps the best that we can do for our children is to offer them a better fare of ethical, esthetic and intellectual food, to exemplify in our own lives the virtues and excellencies which we would have them possess. If we have avoided that great enemy of discipline, hostility, if we have established our authority by its kindliness, reasonableness and yet inflexibility, if we have striven early enough, patiently enough and constantly enough, perhaps we shall not fail.

EMANCIPATION

Since the end and purpose of discipline is self discipline, since we would, with wisdom, emancipate and not enslave our children, our most urgent duty is a progressive relaxation of our authority. Each newly won victory for the child must grant a new responsibility and a new independence. As the infant who has learned at last to walk must be allowed to walk, so each child who has learned to think must be allowed to think. The great, all-inclusive conditioning of our children must be the conditioning to self sufficiency. The reward is self respect and self confidence. This training in independence must not be reserved for the last; it must be begun early and continued daily in specific detail. Every child must be expected to exercise his own choice in each matter as soon as his choice is possible, and at whatever cost to the parent. Neither the tyranny of selfish love, which suffocates with protection, nor the tyranny of selfish discipline, which strangles with restraint, has any place in the training of a child. In this age of small families, when the identification of the parent is concentrated in one or two children, there may indeed be some justification for the current diatribes against poor "mom." The irresolute, dependent, clinging child is at times the product, to be sure, of the emotionally starved and possessive mother, who insists on living for herself the lives of her children and who passionately resists setting them free. But one may well doubt the existence of such mothers or fathers in any significant numbers. For the curse of the modern home is the neglect of children by parents who are too busy with their own pursuits and self gratification to trouble themselves with their care. Neither neglect nor domination can be justified; neither should be condoned. For the clear and urgent duty of the parent can only be the loving and steadfast training of the young and their progressive emancipation from the bonds of their immaturity.

THE RESULTS

What may we expect to result from the conscientious application of the disciplinary principles here offered? Shall we produce only a race of (Heaven forfend!) "perfectionists?" I think not. Compulsive perfectionism probably does not result from such factors. And it is well to remember that a measure of perfectionism is the indispensable ingredient of our culture. Without it we should never have had a science, an art or a literature. We should have been denied the achievements of those incorrigible perfectionists, Galileo, Kepler, Newton, Darwin, Einstein. Without perfectionism we should never have had a microscope or penicillin. We should never have seen a Mona Lisa or heard a Fifth Symphony, and we should have missed the teachings of Socrates and the Christ.

But may we not hope, through such discerning discipline, to transmit to our successors something of a moral civilization? May we not win for ourselves and our children such self discipline as may permit the social adjustments which mankind so needs today? May we not give our children an ideal of the perfectibility of human relations and a tool for its slow but sure achievement? I believe that it is not impossible. Perhaps then we shall no longer hear the vain wish for science to take a holiday until man can learn to live in good will with his fellows. Perhaps, both as individuals and as a people, we shall be happier. And perhaps, as parents, we may win the reward of the good woman of ancient times, of whom it was said, "Her children arise up, and call her blessed."

SOME APPLICATIONS OF PSYCHIATRY IN GENERAL MEDICINE

DALE GROOM, M.D
Rochester, Minn.

The internist or general physician, in dealing with the common psychogenic illnesses of his patients, has several advantages over the psychiatrist: he generally sees them in earlier stages when they are more amenable to treatment, he is in a better position to relate symptoms to the overall somatic status, and he can approach the patient as an internist rather than as a psychiatrist. Only a small percentage of neurotic patients can be or need to be seen by the psychiatrist. The majority of them, including the many new thousands who appear as part of the aftermath of war, will continue to be treated by physicians in other fields of medicine. And it is becoming increasingly apparent that a greater integration of basic psychiatric concepts with the general practice of medicine is essential if the average physician is to manage effectively this "other 50 per cent" of his medical practice. For the psychiatrist who attempted to practice without an adequate knowledge of general medical principles would be no more vulnerable to gross errors of diagnosis and management than would the internist who had only a vague acquaintance with fundamental psychiatric principles.

Just why the study of man's mental processes has lagged so far behind the study of his physiologic and chemical processes, his anatomy and the organic pathologic changes to which his body is liable, is a matter of some historical significance. Each of these fields is an avenue of approach to the same patient. Each field is limited by the narrowness of specialization and is most useful when integrated with the broader, more comprehensive, truly clinical approach, in which it is possible to see the part in relation to the whole. But because mental factors are less tangible and less amenable to measurement and manipulation, possibly because of certain deep-rooted superstitions and dogmas or the inherent nature of the human mind itself—whatever the historical reasons—the role of mental processes in health and disease has until recently been so far overshadowed by the tremendous nineteenth and twentieth century advances in bacteriology, physiology, biochemistry and the other basic sciences as to become almost obscure. And the study of man's real element of distinction from the lower animals has been left to a small group of investigators whose observations and useful knowledge have just begun to be incorporated into general medical practice.

Psychosomatic medicine, while actually not a new concept, is placing new emphasis on the relationship of psyche and soma and their mutual reactions in disease processes. The psychosomatic approach recognizes that what patients do and feel are facts no less than are the physical conditions observed in the same patients. Emotional reactions of love, fear, anger and hate are real as are the organs of the body and are capable of producing prolonged, disabling, almost intolerable illness—even death. A pathologic anxiety can cause far more suffering than the rheumatic cardiac lesion or the uterine fibroids which a patient may have (as many converts to the various healing cults can testify). Prolonged emotional disturbances are being recognized as potent etiologic agents, as bacteria are recognized, in the production of certain organic diseases. In so far as the broad aim of medicine is to prevent and relieve suffering, psychogenic illnesses deserve their share of consideration by the physician.

APPLICATIONS OF PSYCHIATRIC PRINCIPLES

Of what actual value is an understanding of fundamental psychiatric principles to the average physician in his practice?

The types of patients fall conveniently into two main groups: those in which the primary problem is that of physical illness and those in which the outstanding feature is psychiatric illness.

In the presence of physical illness the patient's reaction to his organic disease may aggravate, obscure or prolong it. For the physician to be able to rule out a neurosis in favor of an organic diagnosis or to make a positive diagnosis of a neurosis coexistent with organic disease may be essential to the correct evaluation of the medical data. A broader consideration of the patient as a whole may temper the treatment of his disease in such a way as to "not just add years to life but life to years." (As one patient observed while struggling along on a particularly strict medical regimen, "You don't really live longer—it just seems longer.")

Psychiatric illness afflicts the largest single group of patients. While they occupy more hospital beds than all other groups together, most of them are not in mental hospitals but are frequenting physicians' offices to complain of innumerable and bizarre psychogenic symptoms. The time demanded by these patients often can be reduced in the long run by effective management. The psychotics, the potential suicides and others who require hospital care by the psychiatrist must often be discovered early if serious consequences are to be averted. The common neuroses, reactive depressions, involutional melancholias and other emotional disorders amenable to treatment should be recognized as such, and their victims should be treated for their actual mental illnesses rather than for some incidental or nonexistent organic discrepancies, "diagnostic placebos," which may serve as foci on which the false symptom patterns ultimately can become fixed beyond accessibility.

This paper is an attempt to synthesize, in nontechnical language, the fundamental concepts of psychiatry that seem most applicable to all the other fields of medicine in which patients consult physicians for help.

Further material was garnered from lectures given to medical officers of the United States Navy who were under instruction in neuropsychiatry at Philadelphia during World War II, particularly from lectures delivered by Drs. Kenneth E. [illegible] ker and Earl Bond. Other sources include the [illegible] enninger, Franz Alexander, Alexis Carrel, Grego [illegible] and others.

Sources of the m [illegible] y. Much of it was derived from a series of lect [illegible] in General Practice," given under the sponsorship of the Commonwealth Fund at the University of Minnesota Postgraduate Center, April 1 to 13, 1946, by a faculty of speakers including Drs. John Romano, Professor of Psychiatry, University of Rochester School of Medicine; Douglas D. Bond, Professor of Psychiatry, Western Reserve University School of Medicine; Walter Bauer, Associate Professor of Medicine, Harvard Medical School; Henry W. Brosin, Professor of Psychiatry, University of Chicago, the School of Medicine; Thomas A. C. Rennie, Associate Professor of Psychiatry, Cornell University Medical College; John M. Murray, Consultant Psychiatrist, Dartmouth College and Massachusetts Institute of Technology; M. Ralph Kaufman, Psychiatrist, Mount Sinai Hospital, New York; Donald W. Hastings, Professor of Psychiatry, University of Minnesota Medical School, and Harold G. Wolff, Associate Professor of Medicine and Associate Professor of Psychiatry, Cornell University Medical College.

To the foregoing might be added a third group, that of psychosomatic illness, in which evaluation of the mental etiologic factors should parallel study of their organic sequelae.

Obviously, the future of psychiatry lies not so much in the salvage of the 1 million patients who crowd mental hospitals as in the applications of psychiatry to all patients. And perhaps in this atomic age when such questions as "Is the human mind outmoded?" are arising, this relatively young branch of medicine may be increasingly looked to for contribution toward the solution of problems of social as well as medical significance.

Then, too, from the physician's personal point of view, an at least cultural knowledge of psychiatry has something to offer: in a more rational appreciation of his fellowmen, in human relations, in a better understanding and perspective of himself and possibly in the matter of some aid to personal development. Finally, there is something to be said for its downright interest, for a patient's mind can be as interesting as his colon.

THE PSYCHIATRIC APPROACH

Many of the old-time physicians, though they lacked modern scientific knowledge and instruments, used effectively principles that twentieth century psychiatry has organized and delineated. Such men were known for their mastery of the art of medicine. But too often, perhaps, attempts to deal with patients who present psychiatric problems are unorganized, amateurish and not sufficiently objective. The physician who is unfamiliar with the mental mechanisms of these patients understandably feels somewhat insecure and prefers to play the game on his home field in terms of exclusively organic studies. Or he may allow his own emotional reactions or "hunches" to tinge his professional judgment. Or, as so readily happens, the obvious, superficial problems in the patient's complaint may be taken for the basic etiologic factors which they obscure.

In the average medical practice there are the patients who utilize physical symptoms (or children) as calling cards to their physicians. There are the patients with real organic disease who manifest a pseudoinsight into a pseudoneurosis because they are unable to face the implications of their actual disease. There are the true psychopaths with their characteristic impulsiveness, lack of emotional response and inability to learn from experience. And there are the often highly successful manic-depressive personalities, the odd schizoids and schizophrenics, the agitated and depressed persons with involutional melancholia. In evaluating the physical symptoms and the psychiatric disturbances of these patients, even a brief psychiatric history is usually far more reliable than mere personal impression.

An effective technic of obtaining the really significant data in a psychiatric history saves much time that might otherwise be lost in dealing with superficialities. Generally the physician is passive at first, allowing the patient to feel free to divulge relevant material, implicitly acknowledging the value of what the patient brings to the interview. Simply a noncritical attitude, by virtue of its rarity in human relations, may foster release of considerable suppressed material. In the development of an effective technic certain aspects of the physician-patient relationship deserve special consideration: the elements of initial intimidation, defensiveness and mutual distrust, which are present in any strange situation; the necessity of meeting on a mutually understandable level; the emotional factor which can catalyze or impair all subsequent therapeutic efforts, and often an unrecognized symbolic relationship (such as the patient's identification of the physician with a parent or authority), which may be utilized in treatment. An aggressive, sleuthing approach tends to put the patient on the defensive; on the contrary, an initially passive, noncritical, interested manner instills confidence and develops rapport. Psychiatry would caution:

> Don't immediately plunge into the depths of the patient's problem. The instinctive reaction to this is one of defense and evasion.
>
> Don't begin by offering excessive or unwarranted reassurances. The intelligent patient usually can see through a pollyanna attitude on the part of the physician and will resent it because it tends to belittle his problems; this leaves him with the impression that the full import of what he may feel in his strange, intolerable, unreal inner world has not received due consideration.
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> Don't be autocratic. With only a few highly dependent, submissive persons is this approach ever effective; certainly to most of them it is unacceptable.
>
> Don't fall into the easy trap of considering that all patients must always overevaluate the physician. One must be able to allow for the fact that all emotions—love, anger, fear and hate—are part of normal development and are inherent in all human relations; that even the admiring patient has a latent hostility which may come forth in subtle resistance or overt belligerency. (Indeed, some patients seem to need only a neutral screen on which to display their unpleasant hostilities; they lose their symptoms when this is afforded.) It is helpful to learn to deal with this hostility, this negative emotional component in the physician-patient relationship, much as the clinical pathologist learns to handle offensive excreta. On analysis, such hostility usually is directed not at the physician personally but at the parent or authority which he symbolizes to the patient.
>
> Don't forcibly unwrap a patient without having some idea of his mental anatomy and without knowing how to wrap him up again. As one psychiatrist put it: "Don't do a mental laparotomy and leave the incision gaping open." The neurotic personality has defenses that have been built up carefully and often precariously, which serve the useful purpose of protection against the ravages of anxiety, guilt or fear. Patients are readily made worse—even overwhelmed—if these defenses are abruptly knocked out before adequate supports have been evolved to replace them.

Guiding the interview economizes on time and is usually more satisfactory than pushing the interview. Questions such as, "Would you like to tell me about ——?" invite the patient's cooperation and avoid the semblance of grilling. Direction and amplification of what appear to be significant facts in the history may be obtained by such comments as, "I'm interested in this —— that you mentioned." Then listen—attentively, sympathetically and uncritically—and the patient ultimately will display his real conflicts in vivid, enlightening detail.

Interpretation of the psychiatric history and observations is essentially analogous to interpretation of the medical history and physical examination in that it involves a knowledge of what might be called psychophysiology (the mental mechanisms operating in all persons) and of psychopathology (the specific mental disease states) in addition to the judgment derived from experience. Beyond this, psychiatric study places a special premium on the ability to deal with abstractions. A certain inherent sensitivity and intuition enables the astute clinician in his study of his patient to "hear the music he sings as well as the words he speaks."

The patient and his problems must be interpreted objectively. The more unresolved conflicts the physician himself may have, the less able he is to consider objectively those of others, tending instead to interpret them in terms of his own. He should not be actuated by any of his own needs for authority, for prestige or for delving into other people's lives—factors concerning which he must, to a healthy degree, be self critical.

MECHANISMS IN NEUROSES

Psychiatry believes that there is a causality in mental disease, that the neurotic patient is not just an unfortunate victim of bad fortune but that he retreats into his illness through stages which can be studied and whose course may be predicted. Mental illnesses tend to fall into patterns, which permit classification under diagnoses. The neuroses, afflicting as they do that largest single group of patients, are of major interest to the average physician.

A neurosis arises in a person as the result of the stress to which he is subjected acting against his intrinsic mental and emotional stability. This stress is either internal (due to conflicts arising from feelings of guilt, hostility or frustration) or external (due to the trauma of war, shock, grief, economic threat or environmental insult). Factors of emotional significance are generally more potent in producing stress than are those of a purely intellectual nature, and any personality will break down if this stress is sufficiently great. Against stress is aligned the subject's mental stability, which is comparable to his physical resistance to infections and which comprises his emotional maturity, his hereditary assets, his physical health and the sum of all the earlier cultural and intellectual influences stemming from his home and environment. These are his bulwarks against stress. When they are exceeded, the equilibrium fails and compensatory mechanisms that are basically neurotic are mobilized.

But obviously not all neurotic mechanisms are destructive. To a great extent they do compensate for failure; compensate in terms of adjustment to the problems that precipitate them or in terms of the drive to overcome them that is often recognized as ambition, or in terms of achievement in business or science, in marriage or the arts. It has been contended by philosophers that civilization itself is essentially a neurotic product in that it necessitates the thwarting of many primitive drives, including the aggressive ones which now and then break forth in waves of war as civilization fails, admits defeat and settles its problems by primitive force.

In the patient, too, it is this decompensation, or sometimes overcompensation to a pathologic degree, that attracts attention to the fundamental disorders beneath. Symptoms, whether they be expressed as complaints or abnormal behavior, then indicate that the mechanism has failed or has exceeded what is generally regarded as normal bounds. Then the personality is said to be sick. Help from relatives, friends, physicians or perhaps cultists may be sought in the patient's effort to restore a satisfactory balance. Or he may continue to live his disordered life, more or less conspicuously; he may develop a peptic ulcer, become an alcoholic addict or a miser, complain of innumerable physical symptoms, seek unwarranted surgical procedures, change jobs or wives or physicians or try suicide. All are familiar manifestations of uncontrolled anxiety.

Because it furnishes the power by which the subject may be carried to the often unreasonable extremes of neurotic illness, anxiety has been called the motor of neuroses. It arises in conflicts, and it drives toward their solution. Normally it is useful. In acute stages it may go on to panic. Chronic anxiety constitutes a threat to both mental and physical integrity and is apparent by its effect on the personality (nervous tension, depression, irritability and insomnia) or by psychomotor restlessness and tremors. Anxiety frequently can be observed objectively, even can be measured, through its autonomic overflow into tachycardia, pallor, dilated pupils, hyperhidrosis, changes in blood pressure and gastrointestinal dysfunction. Focalized, anxiety produces phobias or "organ neuroses." Generalized (the so-called free floating anxiety), it becomes a vague, disturbing tension capable of alighting on any convenient symptom.

Psychiatry has elucidated some of the mental mechanisms by which the personality copes with anxiety. These mechanisms are universally present both in health and disease, as are metabolism and peristalsis, but they may become disordered in mental illness. Rarely are they found in pure culture; usually combinations of them go to make up the psychopathologic process of a neurosis. Their value to the clinician is that they help him bring order out of the seeming chaos of symptoms, motives and conflicts which his patient presents. Some of the more commonly encountered mental mechanisms deserve special consideration:

Evasion.—This is a simple circumvention of the anxiety-producing factors. Relaxation, travel, daydreaming, the use of alcohol—all bring temporary respite which in pathologic degree can constitute neurotic evasion. The alcoholic, the hermit, the professional clubwoman intent on her busy idleness, the vagrant, the fanatic on hobbies or religion—most of these familiar characters are readily seen to be evading some highly distasteful problems. And since physical illness is regarded as the perfect excuse for nearly any failure, physical symptoms often serve the same evasive purpose. (It is doubtless true that many persons with strong fears of organic disease avoid medical examinations because in some irrational subconscious way they sense that as long as the disease has not been diagnosed they do not have to face the thing they fear.)

Regression.—Essentially a turning backward, regression implies a withdrawal such as the ameba displays when it withdraws its pseudopods from an unpleasant stimulus. In a regressive mechanism a person reacts to his problems in a way not commensurate with his degree of maturity, whatever that degree may be. Instead, he retreats to the security of earlier, more deeply ingrained patterns of behavior: the impulsiveness or competitiveness of adolescence; the thoughtlessness, dependency, pouting, magic-thinking or irritability of childhood; even the complete, demanding selfishness of infancy. Emotion that through normal development had been invested in interests outside the self, such as work, friends, hobbies and social activities, may be withdrawn back into the self, leaving the patient uninterested, sullen, apathetic and selfconcerned. In this respect convalescence is like adolescence—a rechanneling of emotion and interest outward, into more mature investments.

Devaluation and Denial.—The anxiety is lessened by minimizing, devaluating or denying the reality of the anxiety-producing factors. It is a common observation that some persons can deny the existence of medical, economic or marital problems to the point of ultimate ruin. To deny or devaluate what one does not wish to believe may be solacing although hardly *mature.* (And certainly failure to follow the physician's instructions is often a subtle manifestation of the patient's reluctance to accept the existence of his organic disease.)

Postponement.—When it habitually forestalls or actually prevents constructive action, postponement is pathologic. A delightfully neurotic character was Dickens' Mr. Micawber, whose constant "waiting for something to turn up" dulled the edge of all life's reverses which action might have prevented.

Sublimation.—The normal emotional energy that becomes dammed up by frustration is diverted through sublimation into vicarious outlets, which are usually constructive or at least socially acceptable. Normal living demands this in moderation; asceticism requires it in extreme degree. But if the mechanism breaks down, outlets that are destructive to the person or to society may be utilized, and symptoms appear.

Projection.—To attribute one's own motives or defects to others is to project them. Carried to extreme, "all things look yellow to the jaundiced eye." Projection is the chief mechanism in paranoid reactions.

Introjection.—The opposite of projection, introjection provides the basis of hero worship and is prominent in the production of grief.

Rationalization.—"So convenient a thing it is to be a *reasonable creature,* since it enables one to find or make a reason for everything one has a mind to do," observed Benjamin Franklin in his "Autobiography." Like devaluation and denial, rationalization can serve as a *reality-defacing* mechanism. The almost indispensable "sour grapes" reaction allays some of the anxiety of frustration in the same way that fatalistic beliefs and superstitions, so common at the battlefront, relieve fear. Many of the neurotic patient's defenses are rationalizations—plausible excuses he has devised for himself to make reality seem a little more palatable.

Displacement.—Emotional attitudes readily become displaced—or overflow—from their true objects onto secondary objects, as in "taking it out on the other fellow." Often the secondary object is a *symbol* which may later give rise to reactions that appear quite inappropriate without some insight into their symbolic significance. ("Never speak of a rope in the house of a man who has been hanged.")

Conversion.—By means of conversion the anxiety may be so completely transformed into physical terms, such as hysterical paralysis or anesthesia, as to leave the patient apparently calm, placid and happy—"la belle indifférence."

Repression.—With time the unsavory emotional memories are gradually thrust beyond awareness into the subconscious; they are repressed. Recollections of the past, "the good old days," ultimately become the most pleasant ones. But that the unpleasant, repressed material is not actually lost is easily demonstrable: certain psychiatric technics capable of recovering these buried emotional patterns reveal that repressed material is cumulative; it remains essentially unaltered by the person's subsequent intellectual development, and it does exert dynamic influence in the production of mental disease.

THE SUBCONSCIOUS

Except in the acute traumatic neurosis, wherein the precipitating factors are recent, overwhelming and obvious, conflicts sufficient to produce real mental disturbance are generally not entirely accessible to the patient —he is not entirely conscious of them. Nor are they reasonable. Emotional in origin, they usually defy the simple intellectual approach of telling the patient to stop worrying or straighten things out. If the patient could do this he probably wouldn't be seeking help. The highly intelligent patient, who actually does know better, may be powerless to alter thinking that has become emotionally magnified and distorted, because a large share of that distortion takes place at a level of mental functioning below consciousness, in the so-called subconscious.

Present day psychiatry conceives of the subconscious as a sort of subterranean reservoir of the mind, which contains all of a person's instinctual drives and into which go all his life's experiences. There ideas are subject to no logical appraisal or control as are conscious ideas; they can operate independent of his intellectual maturity and his sense of values. Symbols, primitive in nature, are utilized freely, occasionally displaying themselves in dreams or symptoms. In the subconscious mind conflicts may be waged which usurp a portion of the subject's normal energy to hold them in check. And such mental mechanisms as projection, regression, evasion and sublimation—all originally protective—may lead to the unreasonable extremes of neurotic illness.

In his highly readable book, "The Human Mind," Dr. Karl Menninger[1] suggests the following analogy:

> Think of the mind as a theatre. Let the field of consciousness be represented by the stage. On it, from time to time, there come and go certain actors (ideas and desires), directed from the wings by a stage-manager (the censor . . .), who has derived his standards and experiences from training and example and precept and pictured ideal—from the lives and mouths of parents, teachers, early friends, and other early influences.
>
> All of the actors—and we infer that there are very many of them—want to act. They will get on to the stage, if possible. The stage-manager holds some of them off stage merely until the proper time for their appearance. They are suppressed *pro tem.*, and come or go as called. Others never get on the stage at all. They are poor actors, or unclothed and motley, or belong in another show, and so have no business clamouring for admission here. Most of them are not even in the wings (the *foreconscious*), but are outside the theatre, thrown out, perhaps, in the course of previous rehearsals and performances. They noisily demand to be let in, hoping to get on to the stage, but the confusion they create is not heard on the stage or in the audience. These actors, locked outside, are repressed ideas and desires.
>
> These, the repressed, and even the suppressed, actors may trick the stage-manager by disguising themselves in various costumes and masquerading as proper actors in the show. They are never wholly proper, and the keen eye may detect their real identity and trace their origin. But the average playgoer (the ordinary person) will think only that the play is here and there a bit shabby or clumsy or strange.

PSYCHOTHERAPY

The Aim of Psychotherapy.—Since neurotic symptoms are fundamentally regressive, irrational, protective substitutions for the real problems which produce them, the aim of psychotherapy is to help the patient back to reality. He must achieve a more mature method of dealing with reality rather than escaping into neurosis. Attempts to substitute the physician's methods, or those of a relative or creed or cult—a sort of mental antitoxin —leave him little lasting benefit. Ideally, the patient should be helped to find his own way, a way commensurate with his abilities and his standards, by relieving him of disabling emotional handicaps. He must relearn to use his inherent adaptive mechanisms in coping with reality if he is to gain an active rather than a passive immunity to his neurosis.

More than any other form of therapy, psychotherapy must be individualized. To be rational it must be based on an adequate understanding of the psychopathologic condition being treated. Various avenues of psychotherapy are available to the physician:

Supportive Psychotherapy.—The emotional cripple, like the orthopedic cripple, may need the support of a crutch before he is able to walk alone. This support is implicit in the physician's attitude, in the physical examination, in conservative reassurance, perhaps in the discreet use of sedatives as emergency measures or in the protection of the patient against mistakes due to his illness. While thorough physical studies are necessary to rule out organic disease and to reassure the patient, once the somatic status has been established such studies should not be reopened without real indication, for repeated examinations which throw suspicion on an organ serve to focalize the patient's anxiety and cater to his evasive desire to attribute symptoms to organic disease rather than to his own disordered thinking.

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1. Menninger, K. A.: The Human Mind, ed. 3, New York, Alfred A. Knopf, Inc., 1945, p. 279.

Manipulative Psychotherapy.—Alterations of aspects of the patient's environment, including occupational therapy, hobbies, play, social activities, routine, work and vacations are universal but generally only palliative devices. Often there can be accomplished some alteration of the factor of secondary gain (the real or fancied gain the patient derives incidentally from his neurosis—not the primary reason for the neurosis as is the case in malingering). In a decision on the efficacy of a vacation the intrinsic factors of the illness should be weighed against the extrinsic (the situational and environmental). If the person carries his problems with him he is his own problem, and a rest cure, a withdrawal from normal routines, affords an opportunity for greater turning in of interests by the provision of more time and energy for self indulgence. Perhaps, as has been suggested, physicians should occasionally examine their motives for sending anxious patients on vacations.

Release of Malignant Tensions.—The release of malignant tensions is a basic psychotherapeutic tool, in that it deals with fundamental causes of neuroses. Memories of experiences in which strong emotional responses were evoked retain that emotion, be it pleasant or unpleasant. These are emotionally charged memories, which often contain more feeling than fact and are capable of producing profound disturbances in personality. When they are subsequently recalled the original emotional responses are again evoked and, under proper circumstances, deflated. Psychiatry calls this process *abreaction,* whereby harmful memory patterns are divested of their destructive emotional charges. As the fears, the feelings of guilt and the hostilities are thus reduced to the level of the actual things feared or regretted or hated, the patient is enabled to see the traumatic experiences for what they are and to exercise more mature judgment, perspective and intellect in adjusting to them. By then working through these heretofore indigestible emotional memories, the patient can become desensitized to them, much as the allergic patient is desensitized to his antigens. Abreaction and desensitization are the basis of therapy in narcosynthesis, the short cut in psychotherapy used so widely in World War II, in which both conscious and subconscious traumatic memories are recaptured and relived by the patient in the semiconscious state induced by the intravenous administration of "sodium amytal" N. N. R. or "pentothal sodium" N. N. R. More subtle forms of release of malignant tensions are commonly provided by diversions, such as competitive sports as outlets for aggressiveness, or social and economic conquests as outlets for fears and feelings of insecurity. But the release of these disturbing tensions by simple mental catharsis—a thorough ventilation of the basic problems—offers a direct and often dramatically effective method of alleviating anxiety in the neuroses.

Explanatory Psychotherapy.—Once the mechanisms of a neurosis have been ascertained, the judicious explanation of them provides the patient with some degree of insight into the nature and origins of his illness. The illumination and interpretation of his conflicts allows physical symptoms to be divorced from fears of organic disease and leaves him with a more nearly adequate understanding of his own mental processes. The mental mechanisms, the errors, the emotional tensions and the subjective distortions of reality can then be viewed objectively. Perhaps suggestion, direct or implied, may be utilized. But insight should be given cautiously and often sparingly, with the realization that it may become intolerable to the patient if it confronts him with facts which he may be unable to face. Explanatory therapy is most helpful when it acts to dispel the patient's false fears, to clarify symptoms that may be confusing to him, to define the real nature of his disorder and his own mental pitfalls and to direct his course toward recovery.

Like any form of treatment, psychotherapy does have potential toxicity, which must be recognized to be avoided. The experience of psychiatrists would suggest:

Don't argue. This encourages opposition. The patient has reasons for feeling as he does, probably emotional reasons which are not amenable to logic anyway.

Don't become punitive. When baffled in diagnosis or thwarted in treatment there is an understandable inclination to displace onto the patient one's reaction to his disease. On the other hand, don't become maudlin, identifying yourself too much with the patient and neglecting to wean him away from his neurosis.

Don't try to substitute your standards for his own. They probably wouldn't be acceptable to him—at least until he worked them out for himself. And to use oneself as a criterion, even if it is justifiable, is poor psychology.

Don't accept the responsibility of making major decisions for the patient (particularly as to marriage, divorce and business affairs). The only safe way is for him to defer such decisions until he has regained sufficient stability to make them for himself.

Don't allow the patient to unload his share of the responsibility for his recovery onto you. For the physician to accept this encourages dependence in the patient whose goal should be independence.

Rather:

Approach the neurotic patient with a manner that displays at least as much interest as your approach to his roentgenogram or electrocardiogram.

Give him the assurance that you want to help him, and encourage him to take the initiative with the realization that at least half the responsibility in the treatment is his.

Listen to him—attentively, sympathetically, noncritically, without ridicule or amusement; remember that his problems and symptoms are not absurd to him.

Sift and interpret, isolating what, on the basis of your understanding of mental illness, are the basic etiologic factors and mechanisms. Then:

Gradually guide the patient back to a more mature way of dealing with his problems. Show him the probable relationship between his symptoms and his maladjustments and lead him out of his neurotic escape toward reality.

PROGNOSIS

Some generalizations as to prognosis in organic disease are often applicable to mental illness. The duration of the neurosis may determine the ultimate results of treatment; the more long standing the symptom pattern, the more fixed it becomes and the more deep rooted and numerous the secondary changes likely to take place in the personality. These may eventually render the original disorder inaccessible, if not obscure. Also, the amount of stress necessary to produce the disorder—whether it was cumulative or acute stress—is often a rough measure of the treatment necessary to restore equilibrium. Particularly, the patient's personality assets are of prognostic significance, including his intelligence, his emotional maturity and especially his inherent stability as judged by his previous performance and achievements. The person who has been able to achieve adequate social, occupational and marital adjustments in the past logically can be expected to have a far better prognosis than the one who has lived on the ragged edge of security in constant conflict with his environment.

Obviously, many neurotic patients cannot be cured. For some of them the secondary gains of illness are too great or reality is too severe. But even these patients can be helped to cooperate with the inevitable—to live with their illness, as the diabetic patient is taught to live with his. By helping psychoneurotic patients to achieve a more satisfactory adjustment to themselves and to reality, the physician enables them to live lives which are healthier both mentally and physically.

EPIDERMAL CARCINOGENESIS

E. V. COWDRY, Ph.D.
St. Louis

About ten years ago I was invited to initiate a long term cancer project at Barnard Hospital. It was decided to study development of cancer in the most favorable experimental conditions that could be found.

Epidermis was chosen as the tissue chiefly because it makes up the surface of the body and is easily accessible. But we had in mind also other advantages. It provides cells of a single type conveniently arranged in layers of increasing differentiation with a minimum of intercellular material and no blood vessels. Because of its avascularity and high degree of cellularity, chemical analyses relate more directly to the epidermal cells than do those of any other tissue.

Mice of a closely inbred strain were selected as the animals in order to reduce individual variability to a minimum.

Methylcholanthrene was selected as the carcinogen because substances of somewhat similar nature naturally occur in the body and it can be obtained in a chemically pure state, making possible standardization of dosage. Methylcholanthrene was applied to the skin in a 0.6 per cent solution in benzene.

We had then a biologic equation for analysis:

Epidermis + Carcinogen Repeatedly Applied → Hyperplastic Precancerous Epidermis — Carcinogen → Squamous Cell Cancer.

The method has been to determine quantitatively the properties of normal untreated epidermis, of epidermis in various stages of hyperplasia and of the resulting cancers.

In the accompanying table, passing from left to right, the properties are listed, the changes from the normal found in precancerous hyperplastic epidermis are given and likewise the changes from the precancerous epidermis discovered in the cancers, and lastly references are supplied to the papers by members of our team reporting the findings.

I. PRECANCEROUS HYPERPLASIA

Before any cells display malignant behavior in the response to cutaneous applications of carcinogen, the epidermis becomes hyperplastic. It also becomes precancerous in the sense that conditions are established in it which antedate the development of cancer. This precancerous period lasts for ten or more weeks—a long time in the life of a mouse.

Some changes in the properties of precancerous hyperplastic epidermis from those of normal untreated epidermis have been determined. Space permits listing only the direction of the change, whether it is an increase or a decrease, and its extent figured as a percentage of the normal. In general, the percentage changes are attained promptly. Since they endure without substantial modification for weeks, the new conditions and the properties in which no changes are noted constitute together a new precancerous epidermal equilibrium.

Examination of data in column I of the appended "Balance Sheet," therefore, provides clues as to the condition of cell life in the epidermis, which, for a considerable time, are imposed on many epidermal cells before a small minority of them show evidence by their behavior of having undergone a malignant transformation. Multiple chemical deficiencies appear to predominate. Note especially the decreases in total lipid, calcium, iron and biotin. Except for a substantial and late increase in cytochrome oxidase activity, the increases in properties are mild compared with these deficiencies. There are, for instance, slightly more magnesium, pyridoxine and water. But the importance of the extent of change in any property, whether an increase or a decrease, can be overestimated. Those measured in but small percentages may be as significant as the larger ones. The mind quickly gets to work trying to put 2 and 2 together in an attempt logically to construct a picture of the consequences of these changes. We withhold judgment because the unexpected so often happens in our studies. The further we go the more involved our task becomes.

However, it is safe to say that the conditions of cell life of the cellular population as a whole have been fundamentally changed. The cells must face deprivations and hardships to which epidermal cells are not normally subjected. As is to be anticipated in making the necessary adjustments, the cells change. They swell and become larger both in cytoplasmic and nuclear volume, but the nucleocytoplasmic ratio declines. Cell division is speeded up in frequency and the nuclei show distinctive changes—decrease in thymonucleic acid, increase in displaceability of chromatin and nucleoli and abnormal mitoses. In the chromosomes themselves, there is a decrease in desoxyribonucleic acid.

The principal handicap seems to be felt more by the spinous cells than by the basal ones. Their increase in size is greater and the displaceability of their nuclear contents subjected to ultracentrifugal force is more marked. Demineralization, revealed by the microincineration technic, is often greater in the intermediate epidermal zone occupied by spinous cells than in the more distal and more proximal zones. This may signify that the spinous cells suffer more from calcium (the chief component of the predominant white ash), and perhaps from other deficiencies, than do the basal cells nearer the source of supply in the underlying dermis. The normal epidermis of the backs of mice is so thin that a clearcut distinction between spinous and basal cells does not obtain, but in the normally thick epidermis of their foot pads this distinction is marked, and mitotic frequency is greatest in the spinous cells. We attach some significance to the fact that in precancerous hyperplastic epidermis maximum mitotic frequency is in the basal layer. It is as if conditions

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From Washington University and the Barnard Free Skin and Cancer Hospital.

Aided by grants from the United States Public Health Service and the Charles F. Kettering Foundation.

Read in a symposium on "The Present Status of Cancer Research" before the Section on Pathology and Physiology at the Ninety-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., June 13, 1947.

Balance Sheet: Integration of Changes in Experimental Methylcholanthrene Epidermal Carcinogenesis

Properties	I Precancerous Hyperplasia Changes from Normal Epidermis	II Cancer, Changes from Precancerous Hyperplasia	Workers
Cell volume	Over 300% increase in spinous cells; about 225% increase in basal cells	Usually decrease in 17 cancers compared with hyperplastic spinous cells	Cowdry, E. V., and Paletta, F. X.: J. Nat. Cancer Inst. **1**: 745-759, 1941
Nuclear volume measured in sections	About 100% increase in spinous cells; about 75% increase in basal cells	Usually increase in 17 cancers compared with hyperplastic spinous cells	
Nuclear volume measure of whole nuclei separated by centrifugation	50% increase including those of all epidermal cells	Not measured	Kraemer, D. Z.: Anat. Rec. **94**: 289-311, 1946
Nucleocytoplasmic ratio	30-40% decrease in spinous cells; about 60% decrease in basal cells	Not measured	Cowdry, E. V., and Paletta, F. X.: Am. J. Path. **17**: 335-358, 1941
Displaceability of chromatin and nucleoli by ultracentrifugal force	Gradual increase, mostly in spinous cells	Marked increase uniformly in malignant cells; no accurate quantitative data	
Intranuclear thymonucleic acid (Feulgen reaction)	Decrease	Increase but less than in normal epidermis	Stowell, R. E.: J. Nat. Cancer Inst. **3**: 111-121, 1942
Mitotic frequency in mounts of whole epidermis	Increase about 1,000%	Cannot be counted in whole mounts because of thickness	Cooper, Z. K., and Reller, H. C.: J. Nat. Cancer Inst. **2**: 335-344, 1942. Reller, H. C., and Cooper, Z. K.: Cancer Research **4**: 236-240, 1944
Mitotic frequency in sections of epidermis	Maximum shifts to basal layer from normal location in thick epidermis in spinous layer	Distribution in layers not feasible to measure in cancers	Cowdry, E. V.: Van Dyke, J. H., and Geren, B. B.: Cancer Research **6**: 620-624, 1946
Abnormal mitosis	Appears at 2 days; percentage of abnormal metaphases less than 40	Increase in number; percentage of abnormal metaphases greater than 50	Biesele, J. J., and Cowdry, E. V.: J. Nat. Cancer Inst. **4**: 373-384, 1944
Cytoplasmic ribonucleic acid	Initial increase	High in one cancer studied	Biesele, J. J.: Cancer Research **4**: 737-750, 1944
Alkaline phosphatase	Initial increase chiefly in basal cells	No change in spinous but slight increase in basal cells	Biesele, J. J., and Biesele, M. M.: Cancer Research **4**: 751-755, 1944
Mineral residue from microincineration	Patchy demineralization; spinous layer especially	(Method requires improvement)	Paletta, F. X.; Cowdry, E. V., and Lischer, C. E.: Cancer Research **1**: 942-952, 1941
Total lipid/P N* ratio	60% decrease	Determinations not made yet	Wicks, L. F., and Suntzeff, V.: J. Nat. Cancer Inst. **3**: 221-224, 1942
Cholesterol/P N ratio	45% decrease	Determinations not made yet	Wicks, L. F., and Suntzeff, V.: Cancer Research **5**: 464-468, 1945
Lipid phosphorus/dry weight ratio	30% decrease	91% increase	Costello, C. J.; Carruthers, C.; Kamen, M., and Simoes, R. L.: Cancer Research, to be published
Specific activity of P 32 in phospholipid fraction	No change	No change	
K/N P ratio	No change	16% decrease	Carruthers, C., and Suntzeff, V.: Cancer Research **3**: 744-748, 1943; Suntzeff, V., and Carruthers, C.: J. Biol. Chem. **153**: 521-527, 1944
Na/N P ratio	No change	22% decrease	Carruthers, C., and Suntzeff, V.: Cancer Research **3**: 744-748, 1943
Mg/N P ratio	25% increase	17% decrease	Carruthers, C., and Suntzeff, V.: Cancer Research **3**: 744-748, 1943; Suntzeff, V., and Carruthers, C.: J. Biol. Chem. **153**: 521-527, 1944
Ca/N P ratio	60% decrease	53% decrease	Suntzeff, V., and Carruthers, C.: J. Biol. Chem. **153**: 521-527, 1944
Ratio of free to bound Ca	No change	Decrease free Ca	Lansing, A. I.: to be published
Fe/N P ratio	Decrease, 50% early, 70% late	No measured change; actually slight decrease because of Fe in hemoglobin	Carruthers, C., and Suntzeff, V.: J. Nat. Cancer Inst. **3**: 217-220, 1942; Science **99**: 245-247, 1944
Cu/N P ratio	10% decrease	70% decrease	Carruthers, C., and Suntzeff, V.: Science **99**: 245-247, 1944; J. Biol. Chem. **159**: 647-651, 1945; Cancer Research **6**: 296-297, 1946; ibid, **6**: 8-10, 1946
Zn/N P ratio	30% decrease	55% decrease	
Ascorbic acid/N P ratio	No change	No change	Carruthers, C., and Suntzeff, V.: J. Nat. Cancer Ins. **3**: 217-220, 1942
Bioassays of p-aminobenzoic acid by means of mutant strains of Neurospora	No change	28% increase	Tatum, E. L.; Ritchey, M. G.; Cowdry, E. V., and Wicks, L. F.: J. Biol. Chem. **163**: 675-682, 1946; Ritchey, M. G.; Wicks, L. F., and Tatum, E. L.: J. Biol. Chem., to be published
Choline	Slight increase	133% increase	
Inositol	Slight increase	119% increase	
Pyridoxine	24% increase	25% increase	
Biotin	61% decrease	19% increase	
Succinic dehydrogenase activity	No change	350-450% increase	Carruthers, C., and Suntzeff, V.: Cancer Research **7**: 9-14, 1947
Cytochrome oxidase activity	Slight increase early, 100% increase later	12% decrease	
Water content	10% increase	23% increase	Carruthers, C., and Suntzeff, V.: Cancer Research **6**: 296-297, 1946; ibid. **6**: 8-10, 1946
Desoxyribonucleic acid on wet weight basis	36-40% decrease like nucleocytoplasmic ratio	38% decrease	
Desoxyribonucleic acid in chromosome masses collected by ultracentrifugation	23% decrease	110% increase	Gopal-Ayengar, A. R., and Cowdry, E. V.: Cancer Research **7**: 1-8, 1947

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* Protein-nitrogen. † Nucleoprotein-phosphorus.

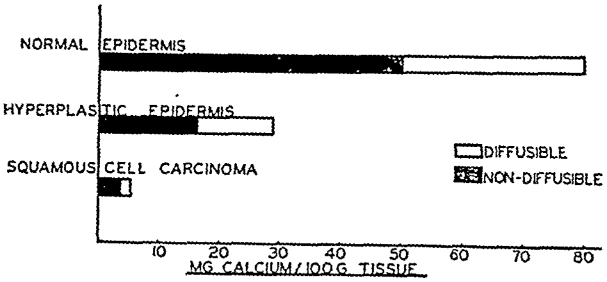
for cell division were unfavorable in the spinous layer as compared with the better located basal layer. Moreover, in the spinous cells, abnormal mitoses are more conspicuous than in the basal ones.

Purely as a working hypothesis, we entertain the idea that the malignant change is a mutation in a small number among the legion of spinous cells subjected to the brunt of the deprivations. In terms of Spencer's theory, it is a rare event in a struggle for existence, which, in this case, has gone on for a long time.

II. CANCER

Coming to the actual cancers, I have indicated briefly, in column II of the table, the properties as compared with those of the preceding precancerous epidermal hyperplasias. Prior to 1944, we worked with numerous individual cancers chiefly by microscopic methods. Later on, we made many analyses of pooled transplants of a single cancer, each transplant so small that necrotic tissue was at a minimum. In these, the outlines of another chemical equilibrium are beginning to take shape.

Examination of column II of the table shows that in cancer also there are conspicuous chemical deficiencies. The decreases are not percentages of the properties of normal epidermis but of the properties of precancerous hyperplastic epidermis (column I of the table). The continued decline in calcium, copper and zinc is precipitate. Of the total calcium, less is the free form. The decrease in cytochrome oxidase activity is intriguing in comparison with the 100 per cent increase over normal in precancerous hyperplasia. But, on the whole, increases are more numerous than deficiencies. The largest increases in percentages are in lipid phosphorus, choline, inositol and succinic dehydrogenase activity. The increase in desoxyribonucleic acid in isolated chromosomes, compared with the decrease in the whole tumor, is interesting. Other moderate increases are in water content and in various B vitamins. As yet we are in no position to try to discern a pattern in these changes; yet it is clear that a second and different chemical equilibrium exists in the cancers and that the behavior of the cells is profoundly modified.



Differences in amounts and proportions of diffusible and nondiffusible calcium in normal epidermis, hyperplastic epidermis and squamous cell carcinoma.

Obviously, many questions remain to be answered, and some apparent inconsistencies require explanation. Even the contrast made between the data in columns I and II of the table may lead us astray. The chemical determinations are of whole precancerous epidermis of the area treated, usually of pooled specimens from several mice to give adequate quantity. The range of variation as between treated mice, and in different parts of the hyperplastic epidermis of a single mouse, is not known. It may be that the new chemical equilibrium is not evenly spread throughout the entire epidermal cell population analyzed. The deviations from normal in column I of the "Balance Sheet" actually may be greater in some areas (perhaps in the intermediate spinous zone) than the figures indicate, being reduced in the whole tissue by the inclusion of areas less changed.

In the same way, the new equilibrium found in the cancers may not be restricted to them, but may antedate the actual cancers. It may exist in small areas of precancerous epidermal hyperplasia in which it is not revealed by our analyses of many pooled specimens, being hidden by the large amount of epidermal tissue not similarly altered included in the analyses. Thus the hyperplastic epidermis may not be precancerous in the sense that I have defined it. On the contrary, it may include some cells which have undergone the malignant transformation and do not display it, because they are still immobilized within the epidermis.

Despite these qualifications it is clear that our analysis of the biologic equation proceeds at four levels: (1) the fact-finding investigation of the properties of precancerous epidermis (column I of the table); (2) experiments based on these facts designed to modify the chemical equilibrium of precancerous epidermis in the direction of normality and thus to prevent development of cancer; (3) the fact-finding investigation of the properties of the resulting cancers (column II), and (4) experiments based on these facts designed to modify the chemical equilibrium of the cancers in the direction of normality and thus to cure them, or, after discovering their specific vulnerability, to devise means of killing them.

The experiments on the second and fourth levels have hardly been started. The same may be said for parallel studies of human tissues on all four levels employing the methods proved useful for mice. But our work is not too rigidly stratified. Some general ideas begin to emerge:

1. Simpson and Cramer[1] (1943) traced the carcinogen into the skin by its fluorescence. They found that methylcholanthrene soon disappears and that three other fluorescent materials appear. It is possible therefore that in this situation methylcholanthrene itself is not the actual carcinogen. Our idea is that what we glibly call carcinogens may be materials which themselves do not generate cancer but which set in train a sequence of events which in certain circumstances does. In man the sequence is usually broken. Were it not so incidence of cancer would be much greater.

2. The same two members of the team[2] (1944) tried the effect of offering methylcholanthrene to the epidermis in a more natural vehicle than benzene, namely, wool fat. They were surprised to find that no cancers resulted. After a long interval they treated the same mice with methylcholanthrene in benzene, and cancers sprouted in a higher percentage and more quickly than in mice not previously treated with the methylcholanthrene in wool fat. Evidently the methylcholanthrene in wool fat sensitized the epidermis to a subsequent application of the same carcinogen in benzene.

Further experiments revealed that this hypersensitivity was not restricted to the carcinogenic influence of methylcholanthrene but applied to the carcinogenic influence of burns. In mice whose skins were not sensitized in this way cancers developed at the sites of burns only extremely rarely, whereas in those made hypersensitive cancers developed rather frequently. All this Simpson reported [3] at the recent meeting of the American Association for Cancer Research in Chicago. It means that one must also consider the possibility of induced hypersensitivity to carcinogens in man, and further that this hypersensitivity may not be single but multiple. Thus is the complexity of cancer etiology increased.

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[1] Simpson, W. Fluorescence Studies of Carcinogens in Skin: I. of 20-Methylcholanthrene in Mouse Skin After a r Research 3: 362-369, 1943.

[2] Simpson, W. L., and Cramer, W.: Sensitization of Skin by Carcinogenically Inactive Methylcholanthrene to Subsequent Carcinogenesis. *Cancer Research* 5: 5-10, 1944.

The possible factor of hypersensitivity is additional to the factor of local tissue deficiency so evident in mouse epidermis. It is interesting that the deficiency in our series is, like the hypersensitivity, multiple, involving other essential substances besides calcium. In the later years in man, when incidence of cancer is high, local tissue deficiencies may be prevalent. Thus far but little search has been made for them.

3. The observations on calcium deficiency already seem susceptible of partial interpretation. They are as follows:

Calcium, Milligrams per Hundred Milligrams of Tissue

	Normal mouse epidermis 0.014	Normal old mouse epidermis 0.034
Embryo mouse epidermis 0.016	Normal human epidermis 0.016	Precancerous mouse epidermis 0.019
	Cancer, human 0.008	Cancer, mouse 0.009

Note especially that the concentration of calucium in human epidermis is almost the same as in mouse precancerous epidermis and in human and mouse squamous cell cancers.

The change in proportions of free to bound calcium in our experimental series reported by Lansing and Au [4] at the same meeting in Chicago is dramatic.

Not only is the total epidermal calcium decreased in carcinogenesis but the amount of free diffusible calcium becomes much less. It is known that in other tissues decrease in free calcium loosens the intercellular material so that the cells fall apart. Perhaps the anchorage of the epidermal cells in the precancerous epidermis fails with decrease in free calcium which may occur in the tiny area of beginning invasion and not be reflected in the determinations of whole precancerous epidermis. At any rate the invasiveness of growing cancers may be correlated with the undoubted increase in the proportion of free or diffusible calcium to bound calcium and the decrease in total calcium.

Simpson and Gopal [5] reported at the same Chicago meeting the results of experiments with hyaluronidase. Briefly stated, this enzyme greatly facilitates the spread of our experimental cancers. When it is injected in their vicinity they metastasize far more than in its absence. Therefore, in addition to the breaking down of the cohesiveness of cells by the calcium deficiency, there is a spreading factor that increases the permeability of the ground substance of connective tissue. The idea has some justification that to prevent spread decrease in calcium content of epidermis must be corrected and antihyaluronidase must be supplied to counteract the hyaluronidase.

SUMMARY

In conclusion, therefore, our experiments at Barnard Hospital and in Washington University indicate the possibility that multiple deficiencies in the content of essential components of epidermis make the conditions of cell life therein difficult, predisposing to mutations having survival value. Some of these mutations may constitute the malignant transformation. Hypersensitivity to the carcinogen and also to burns can be induced. The decrease in epidermal calcium may favor the breaking away and initial invasion of the dermis by malignant cells. Further spread of cancer is increased by hyaluronidase and may possibly be inhibited by antihyaluronidase, but of the latter we as yet have no evidence.

ABSTRACT OF DISCUSSION

DR. R. R. SPENCER, Washington, D. C.: Basically this project, as I see it, is a study of the carcinogenic mechanism or the transformation that takes place from the precancerous to the cancerous condition, structurally, functionally and chemically. I think that Dr. Cowdry chose the skin because of its accessibility, and you have seen the interesting results obtained. What the sum total of these results means at present I do not know. It would be extremely interesting if some other tissue by some other group were to be studied in this way. I would doubt very much if you would find the identical chemical, structural and morphologic changes in some other organ. I think, too, that in this project, which has been going on several years—and it takes a long time to get these results—he has shown a good example of what is termed "interdisciplinary research" or at least the necessity for interdisciplinary research in cancer, because among Cowdry's group he has physicists, chemists, morphologists and pathologists. It is necessary nowadays to "gang up" on the cancer problem. Otherwise we will not get very far. I have always felt that from now on the great discoveries in cancer will come from group efforts of this type. I have nothing but praise for this pioneering work of Dr. Cowdry.

DR. M. J. SHEAR, Washington, D. C.: For years in the Public Health Service we had been studying the effect of hydrocarbon carcinogens mainly in the subcutaneous tissues of the mouse. Among the findings made with the collaboration of Mr. Leiter was this: that when lard was used as the vehicle for benzpyrene (we restricted it to benzpyrene in this particular set of one hundred and eight experiments with 5,000 mice), following the work of Kennaway and his associates in London, it was found that variable results were gotten with different batches of lard. When that was tracked down by chemical fractionation of the lard, one fraction of lard came out which we termed fraction IV, which exercised a restraining effect on the induction of sarcomas. Whereas sarcomas were produced in 30 or 35 out of fifty control mice, when the same amount of benzpyrene was dissolved in fraction IV and injected into the same strain of mice we got only 2 sarcomas out of 50. That finding was made repeatedly. Here we have from the Barnard Free Skin and Cancer Hospital another carcinogen (methylcholanthrene), another tissue (the skin) of the mouse and another lipid (wool fat); yet similar inhibition of tumor genesis was observed. I should like to mention that another group of investigators at the McArdle Laboratory at Wisconsin, under Dr. Rusch, has made another finding which fits in. They used still another carcinogen, which when given orally produces tumors of the liver. They were studying the effects of different diets and dietary components and, curiously enough, when in the diet there was incorporated hydrogenated coconut oil with the carcinogen they got repression of the induction of tumors of the liver. These three substances —our fraction IV of lard, wool fat at Barnard Free Skin and Cancer Hospital and hydrogenated coconut oil at Wisconsin—all have certain chemical properties in common. It seems worth further study to see whether this phenomenon has still wider applicability, and whether on oral administration of certain hydrogenated fatty materials it would be possible to repress the induction of other tumors and possibly of spontaneous tumors. I should also like to add to what Dr. Cowdry said about this type of systematic work offering suggestions for leads in attempts at chemotherapy. For upwards of forty years it had been alleged on the basis of scanty data that administration of calcium would help control tumor growth. It has been found by us and by others that administration of simple calcium-containing materials was without noticeable effect. But in view of the striking finding made in St. Louis that there is a sharp decrease in the calcium content of malignant cutaneous tumors as contracted with normal skin, less obvious approaches in attempts to increase the calcium content of malignant cells may yield interesting results.

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[3] Simpson, W. L.: An Experimental Study of Single Trauma Malignancy. Paper read before the American Association for Cancer Research, Chicago, April 17, 1947.

[4] Lansing, A. I., and Au, M. H.: Diffusible and Nondiffusible Calcium in Normal Hyperplastic Epidermis and Squamous Cell Carcinoma, paper read before the American Association for Cancer Research, Chicago, April 17, 1947. Lansing, A. I.; Rosenthal, T. B., and Au, M. H.: Ultrafilterable and Non-Ultrafilterable Calcium in Normal, Hyperplastic Epidermis and Squamous Cell Carcinoma, Arch. Biochem., to be published.

[5] Gopal-Ayengar, A. R., and Simpson, W. L.: Hyaluronidase and the Growth of Malignant Epithelial Tumors, paper read before the American Association for Cancer Research, Chicago, April 17, 1947.

Dr. Cowdry, St. Louis: I am glad that Drs. Spencer and Shear brought out those points which they did about my paper because we want you to understand that this is an integrated program, one in which we are trying to find out the facts now, and we are going to attempt to prevent and cure just as soon as possible on the basis of the facts. We think—and I may be a little visionary—that there is a possibility that multiple deficiencies are factors in making the conditions of cell life so arduous that mutations result. We are thinking along lines that I believe Dr. Spencer was thinking along when he delivered his pioneer lecture some years ago, that it is of a survival mechanism. It is not necessary that these deficiencies be the same or these hardships be the same. They may produce mutations. We think that not only may there be local deficiencies promoting mutations but also hypersensitivities which are likewise local, and we are concerned very much with the third point of the breaking loose of the malignant cells and of their invasion or perhaps of their restraint. You see, this leads directly into the problem of hyaluronidase. We have the strong feeling that the Russian ACS (antireticular cytotoxic serum) probably contains some antihyaluronidase and that this explains its sometimes very interesting results.

Acetylcholine and Cholinesterase.—Neostigmine and physostigmine act in the same way. Both depend on the presence of acetylcholine. According to Loewi, Dale and Nachmansohn, there is strong evidence that, in the nervous system, transmission of the impulse from one neurone to the next depends on a formation of acetylcholine at the synapse. This chemical transmits the impulse to the next neurone, and, at the end of the chain, to the ganglion cell in smooth muscle or to the end plate in striated (voluntary) muscle. There is present at these points cholinesterase, which immediately destroys the acetylcholine and allows the synapse or motor end plate to rest until the next stimulus arrives. This process occurs throughout the entire central and peripheral nervous system except in the postganglionic sympathetic nerves, which have their own chemical mediator, sympathin.

The pharmacologic effect of neostigmine and its natural analogue, physostigmine or eserine, is that of depressing the amount of cholinesterase present in the serum. In other words, neostigmine, by depressing the esterase, strengthens the action of acetylcholine on the effector organs. This effect, in the postganglionic fibers going to smooth muscle, is similar to the action of a drug called muscarine and is called "the muscarine effect." The effect on the nerve endings in striated (voluntary) muscle is similar to the early action of nicotine and is called "the nicotinic effect of the neostigmine." The postganglionic nerves going to smooth muscle, and the motor nerves going to striated muscle, are called cholinergic nerves. It is important to note, however, that the nerve supply from the central nervous system to the sympathetic ganglia is also mediated by acetylcholine and (its constituents) are, therefore, cholinergic nerves.—Schwab, R. S., and Chapman, W. P.: Clinical Uses of Neostigmine, *The Medical Clinics of North America*, September 1947.

IMPROVEMENT OF RESULTS IN THE TREATMENT OF UTERINE CANCER

J. HEYMAN, M.D.
Stockholm, Sweden

For the time being there are but two ways in which to control cancer: surgical intervention and radiotherapy. As far as uterine cancer is concerned the surgical technic has been brought to perfection, and further development is hardly to be expected. Thus, significant improvement of the results in treatment of uterine cancer is synonymous with improvement in radiotherapy.

The idea of this paper is to show that—according to the Radiumhemmet experience—it is possible to improve the radiotherapeutic results in cancer of the corpus as well as in cancer of the cervix and to report on various procedures which my colleagues and I have adopted for that purpose.

CANCER OF THE CORPUS

For the last five years about 85 cases of corpus cancer have been referred annually to the Radiumhemmet for radiotherapeutic treatment. About half these cases are not suitable for surgical treatment either because of the spread of the growth (10 to 15 per cent of the total) or because of old age, adiposity, cardiac conditions, diabetes and similar complicating diseases (40 to 42 per cent of the total). In addition, the number of clinically operable cases referred to the clinic by the specialists for radiotherapeutic treatment is increasing year by year. At the Radiumhemmet it has thus become an important problem to develop a satisfactory radiotherapeutic technic for the treatment of corpus cancer.

Table 1.—*Cancer of the Uterine Corpus at the Radiumhemmet*

Five year result in patients treated 1914 to 1941 inclusive

Total number of patients examined	842
Alive without evidence of the disease	442
Absolute cure rate	52.5%

Since 1933 we have adopted a combined operative and radiotherapeutic treatment in which radiotherapy plays the primary and most important part. Surgery is used only in case of failure of radiotherapy. The radiotherapeutic technic which we now use in all cases of cancer of the corpus is called the packing method. The uterus is packed with a sufficient number of uniform radium containers to completely fill the cavity. The technic was recently described in detail in the *British Journal of Radiology*.[1] The necessary variations in the treatment times, given by the physical department in tabular form, are published in the *Acta Radiologica*.[2]

During the period 1914 to 1941 inclusive 842 patients suffering from cancer of the corpus have been examined at the Radiumhemmet gynecologic clinic with a view to treatment. Table 1 shows the result estimated after a period of five years from the beginning of the treatment.

Address of the invited foreign guest read before the Section on Obstetrics and Gynecology at the Ninety-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., June 13, 1947.

[1] Heyman, J.: Brit. J. Radiol. **20**: 85-91, 1947.

[2] Heyman, J.; Reuterwall, O., and Benner, S.: Acta radiol. **22**: 14-98, 1941. Heyman, J., and Benner, S.: ibid. **27**: 328-333, 1946.

With regard to the stated result the following should be observed. This becomes apparent when the following facts are considered. The series does not represent selected cases. The Radiumhemmet serves the northern and middle part of Sweden, and all patients with cancer who are referred for radiotherapy are dealt with there. No matter how advanced the disease may be, the case must be accepted and must appear in the records. In 29 of the foregoing 842 cases treatment was considered unsuitable principally because of the extent of the disease.

In all cases the cancer is microscopically verified. However, the series does include 55 debatable cases. According to our chief pathologist these 55 are most probably adenocarcinomas, though infiltrative growth cannot be definitely demonstrated. Fifty-five of the 442 patients reported as alive and free from evidence of the disease have been operated on after failure of radiotherapy.

The introduction, about 1933, of the packing method has brought about a definite improvement in the results obtained (table 2).

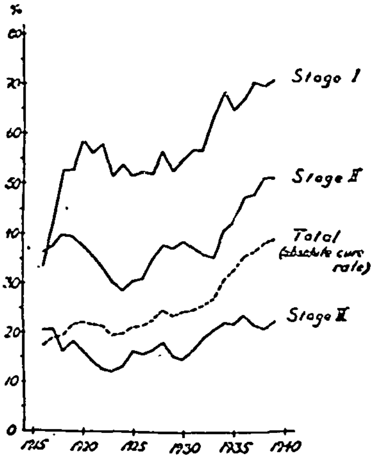

Fig. 1.—Five year result in treatment of cancer of the uterine cervix at the Radiumhemmet, Stockholm, 1914 to 1941 inclusive.

In the period 1914 to 1933 the relative cure rate is 44.6 per cent; in the period 1934 to 1941 inclusive it is 61.9 per cent. The two series are comparable because there is only an insignificant difference in the quality of the clinical material. Further, the proportion of cases with operative intervention and the number of microscopically debatable cases are less in the latter period.

Consequently the improved result must be credited to an improvement of the radiotherapeutic technic.

In cancer of the corpus the result obtained with the packing method (plus operation in case of failure) is considerably superior to that obtained by surgical means alone. It seems to compare favorably with the result obtained by primary hysterectomy plus postoperative irradiation, as far as published results justify such a comparison. By primary radiotherapy equal or better results will be obtained with less risk and less inconvenience to the patients. To me it is obvious that the use of primary surgical intervention in cancer of the corpus will gradually be substituted by primary radiotherapy.

CANCER OF THE CERVIX

In the thirty-four years during which I have served as senior gynecologist to the Radiumhemmet 6,200 patients with cancer of the cervix have been examined there with a view to treatment. Most of them I have examined, classified, treated and followed personally. All patients are traced. No precancerous conditions are included.

Table 2.—*Five Year Result of Treatment of Cancer of the Uterine Corpus in Different Periods*

	1914-1933	1934-1941
Total number of patients treated	354	459
Alive without evidence of the disease after a period of observation of 5 years	158	284
Relative cure rate	44.6%	61.9%

In 4,611 cases a period of at least five years has elapsed since the beginning of treatment. Figure 1 demonstrates the five year cure rates obtained in this series of cases.

The dotted line represents the absolute cure rate, that is, the proportion of patients alive and free from evidence of the disease expressed as a percentage of the total number examined with a view to treatment, whether they are treated or not. The stage rate is the proportion of cured patients expressed as a percentage of the total number in that stage actually treated.

A considerable improvement of the result is noticeable since 1932. It is less obvious in stage 3 because of the relatively high cure rate in the beginning of the period. This is partly due to the small number of cases, partly to the fact that the classification system recommended by the League of Nations' Committee had not yet been adopted.

Table 3 shows the difference between the cure rates prior to and after 1932 expressed in figures.

In the following paragraphs I will try to explain the reasons for the improvement of the results in the last fifteen years.

The improvement is not temporary; it has been noticeable for fifteen years, and consequently it is permanent. Because of the size of the samples it cannot be due to chance variations. It cannot be explained by variations in the quality of the clinical material; since 1923 there have been no such variations of any significance. Further, it cannot depend on an alteration of the routine method of brachyradium treatment. At the Radiumhemmet the Stockholm method is still used; it has been modified only slightly since its adoption in 1914. Finally, there is no differ-

Table 3.—*Difference in the Cure Rates of Cancer of the Uterine Cervix*

	Five Year Result of Treatment		
	1914 to 1931 Incl.	1932 to 1941 Incl.	Difference
Absolute cure rate	21.6%	34.9%	13.3%
Relative cure rates:			
Stage 1	52.4%	69.3%	16.9%
Stage 2	34.7%	46.5%	11.8%
Stage 3	15.6%	22.1%	6.5%

ence in the use of additional roentgen ray and teleradium irradiation sufficiently pronounced to explain the improvement. There is, as far as I can see, only one acceptable interpretation: the improved results are due to a superior judgment in handling the individual case, which, in turn, originates from an increased experience.

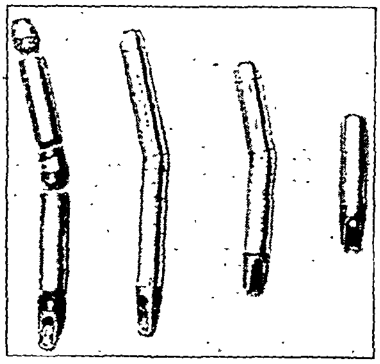
Fig. 2.—Intrauterine applicators.

The original Stockholm method (fig. 3) in treatment of cancer of the cervix consists of a coincident intrauterine and vaginal application of radium salt, screened by a filter equivalent to 3 mm. of lead. The intrauterine applicator (fig. 2) usually holds 50 to 60 mg. element of radium, its length corresponding to that of the uterine canal. For vaginal application the tubes are placed in cylinders (fig. 4) or flat applicators (fig. 5), which vary considerably in size. The applicator chosen in the individual treatment should be sufficiently large to cover the entire surface of the tumor and to distend the vagina laterally. They contain as a rule 80 to 100 mg. of radium. Gauze packing provides the necessary distance between the vaginal applicator and the rectum and keeps the vaginal applicators in position (fig. 5 *A*).

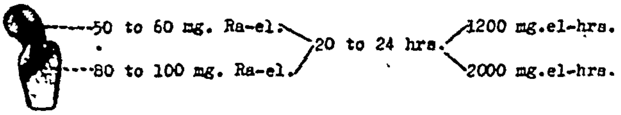

Fig. 3.—Brachyradium treatment of cervical cancer according to the Stockholm method.

Two treatments are given, each lasting for about twenty to twenty-four hours, with an interval of three weeks. In the two treatments the total intrauterine dose is 2,400 to 2,600 mg. hours and the total vaginal dose 4,000 mg. hours.

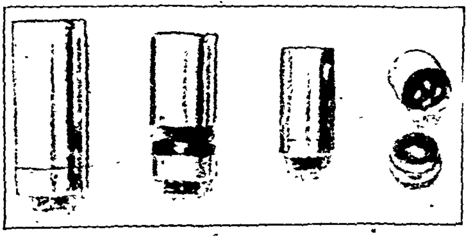
Fig. 4.—Cylinders for vaginal application.

Supplementary roentgen radiation to the parametrium is used as a routine measure. Its value is difficult to estimate even in advanced cases.

Time does not allow me to report on the variations in the standard technic which have been adopted in recent years. The variations are mainly characterized by a 25 per cent increase of the intrauterine dose and a 10 per cent decrease of the vaginal dose.

Correct application of the Stockholm method requires considerable variation in the individual case. The vaginal applicators must be chosen with regard to both shape and extent of the growth. Variations in the vaginal dose are necessary with regard to the size and shape of the applicators chosen, the width of the vagina, the age of the patient and a number of other factors.

The treatment is not varied according to the histologic character of the tumors. No practical difference has been observed by us in the results obtained in the treatment of various histologic types of growth.

The mentioned variations in the standard technic have been practiced at the Radiumhemmet for about thirty years. Though of importance to the result of treatment they are not to be credited for the improvement of the result in later years. Far more important in that respect is the individualization of treatment in cases in which the standard technic would involve serious risks, i. e. those in which there is danger of the development of serious infection, salpingitis, pelvic peritonitis, general peritonitis or septicemia.

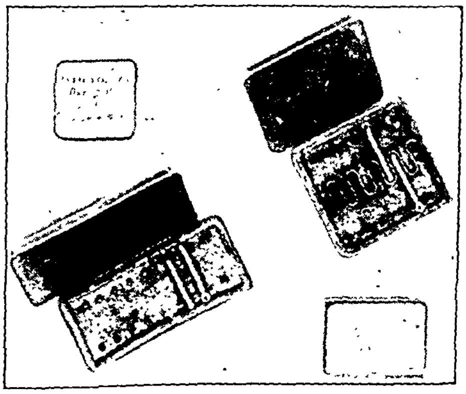
Fig. 5.—Flat vaginal applicators.

In all such cases the standard technic is abandoned or modified. Instead of the combined intrauterine and vaginal application a tentative treatment is given either as an intrauterine application if the cervical canal is easily accessible or else as a vaginal application. In order to diminish the risk of infection the amount of radium applied is increased and the treatment time correspondingly reduced. In many cases special instruments are used; for intrauterine treatment a large applicator which holds up to seven tubes each containing 50 mg. of radium (fig. 7) and for vaginal application a microbomb of two different designs one holding four 50 mg. tubes and the other up to seven such tubes (fig. 8). A tentative treatment time may if necessary be reduced to a couple of hours or less.

During the tentative treatment the patient is carefully watched and the temperature reading taken at least every other hour. Should the temperature rise the treatment is interrupted and will be repeated after an interval of some days.

On account of a persistent infection it sometimes becomes necessary to carry out the entire brachyradium treatment as a series of alternative intrauterine and vaginal tentative treatments. In case of a successful tentative treatment the standard technic is used for the following treatments.

In some instances it is better to postpone the brachyradium treatment in order to give transfusions and to administer vaginal douches for several days. Blood transfusions are frequently used in the treatment of anemic patients.

Finally, there are cases in which it is better to begin with teleradium treatment directed toward the vulva.

Because of the numerous variations in the type of case, in the type of treatment and in the patient's reaction to treatment each of the mentioned varieties constitutes an individual problem. However, some typical instances which are frequently encountered may be mentioned.

A tentative intrauterine treatment preceded by vaginal douches is used in cases in which there is an offensive discharge; in all cases in which vaginal packing was inserted prior to admission in order to control hemorrhage, and in cases in which there is a large sloughing crater. When pyometra is present the first treatment should be an intrauterine application of radium. The presence of chronic salpingitis indicates the need for great care; the tentative treatment should be interrupted if there is even a slight rise in temperature.

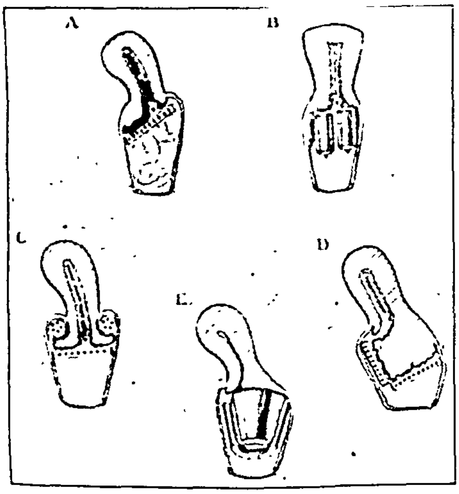

Fig. 6.—Different types of intracavitary radium application.

In lesions with a large cauliflower growth treatment is begun with vaginal douches and teleradium directed toward the vaginal inlet followed by a careful tentative vaginal treatment.

Repeated short vaginal applications preceded by teleradium treatment are suitable in cases of simultaneous extensive involvement of the vagina, offensive discharge and difficulty in finding the cervical canal.

A similarly careful treatment regimen should be adopted in cases in which there is a rise in temperature or a manifest septicemia on admission as well as in cases in which a combined brachyradium treatment according to the standard technic was interrupted because of a rise in temperature. In the first category as well as in patients with a threatening pelvic peritonitis it might be necessary to postpone the brachyradium treatment for weeks and to try to combat the infection by roentgen irradiation. It should be observed that massive roentgen irradiation directed toward the center of the pelvis necessitates a reduction of the brachyradium dose if one wishes to avoid severe injuries to the intestine.

It is an important fact that in recent years it has been considered advisable to modify the treatment technic in about 45 per cent of the total number of patients treated.

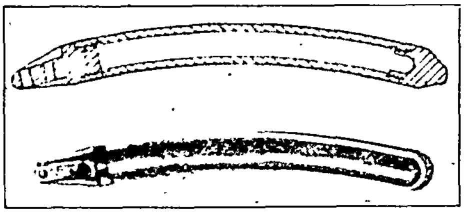

Fig. 7.—Large applicator for intrauterine treatment.

The identification of the cases in which a modified technic should be employed and the proper administration of the treatment require considerable experience. The technic must be varied from patient to patient and must be carefully planned from the beginning. The effect of the treatment must be closely watched during and after treatment. The time and type of subsequent treatments must be thoroughly considered. For the foregoing reasons top results cannot be expected unless there are available a sufficient number of beds, an ample supply of suitable radium containers and a clinic which is well organized for its special purpose. Neither can top results be expected in places where radiotherapy is handled by a young and inexperienced assistant. In surgical therapy top results are credited to the man behind the knife. It is high time that a similar view should be applied to radiotherapy.

Special attention should be devoted to cases complicated by acute salpingitis. Experience has taught that acute salpingitis contraindicates further brachyradium treatment and that there is only one way to handle such cases, namely to remove the adnexa by laparotomy and to apply radium as soon as possible after the operation.

Sixty-eight cases of cancer of the cervix were complicated by acute salpingitis (table 4). In 57 of these radical operations were not performed, and only 14 patients were alive without evidence of the disease five years after treatment. Eleven patients underwent a bilateral salpingo-oophorectomy, and 9 were alive and free from evidence of the disease five years after treatment. The striking result in the latter group is most likely accidental, but the figures suggest that in cases of acute salpingitis salpingo-oophorectomy is the correct procedure.

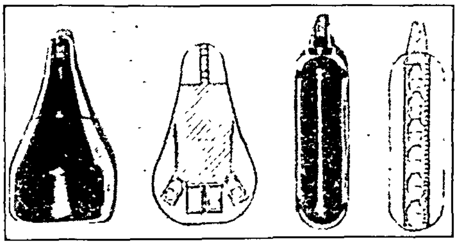

Fig. 8.—Microbomb of two different designs for vaginal application.

ized cigarets, these two groups of tests are considered together in order to increase the total experience. The systolic blood pressure in the normal persons rose 13.4 mm. of mercury, on the average, with a range of 2 to 32; in the patients with cardiac disease it rose 17.6, with a range of 6 to 34. The diastolic blood pressure in the normal subjects rose 10.0 mm. of mercury, with a range of 0 to 20; in the patients with cardiac disease it rose 11.8, with a range of 4 to 22. The heart rate in the normal subjects increased 8.5 beats per minute, with a range of minus 7 to plus 45; in the patients with cardiac disease it increased 9.4 beats per minute, with a range of minus 6 to plus 39. The cardiac output in the normal subjects decreased 1.8 per cent, with a range of minus 20.0 to plus 17.1; in the patients with cardiac disease it increased 6.4 per cent, with a range of minus 10.7 to plus 50.0.

Table 2.—*Averages of Maximal Changes Observed in Blood Pressure, Heart Rate and Cardiac Output in Normal Persons and Patients with Cardiac Disease After Smoking Regular and Denicotinized Cigarets*

Systolic Blood Pressure (Mm. Hg)

Type of Cigaret	Normal Subjects			Persons with Cardiac Disease		
	No. Tests	Average	Range	No. Tests	Average	Range
Regular	45	+13.3	+2:+32	39	+17.1	+6:+34
Denicotinized	11	+13.6	+4:+32	9	+19.6	+12:+30
Total	56	+13.4		48	+17.6	

Diastolic Blood Pressure (Mm. Hg)

Type of Cigaret	Normal Subjects			Persons with Cardiac Disease		
	No. Tests	Average	Range	No. Tests	Average	Range
Regular	45	+10.4	+4:+20	39	+12.3	+4:+22
Denicotinized	11	+ 8.3	0:+16	9	+ 9.7	+4:+18
Total	56	+10.0		48	+11.8	

Heart Rate (Beats per Minute)

Type of Cigaret	Normal Subjects			Persons with Cardiac Disease		
	No. Tests	Average	Range	No. Tests	Average	Range
Regular	45	+ 8.5	−7:+45	39	+10.2	−6:+39
Denicotinized	11	+ 7.5	0:+18	9	+ 6.3	0:+15
Total	56	+ 8.5		48	+ 9.4	

Cardiac Output (Percentage)

Type of Cigaret	Normal Subjects			Persons with Cardiac Disease		
	No. Tests	Average	Range	No. Tests	Average	Range
Regular	16	−2.2	−20.0:+17.1	15	+7.2	−10.7:+50.0
Denicotinized	4	−0.3	−11.0:+15.0	3	+2.5	− 6.0:+ 7.5
Total	20	−1.8		18	+6.4	

A casual glance at the figures suggests greater reactivity in the group with cardiac disease as compared with the normal subjects and in the group smoking regular cigarets as compared with those smoking the denicotinized variety, particularly with respect to cardiac output. However, the categories showing the greater effects are loaded because of the high values in 2 patients with cardiac disease who smoked only regular cigarets, and in each of whom only a single measure of cardiac output was made.

Significant changes in the form of the electrocardiogram were not observed in any of the subjects. In 9 normal subjects and in 9 with cardiac disease slight and varying alterations in the T waves were noted, of which the most frequent was diminished amplitude in leads 2 and 4F. The decrease rarely exceeded 2 mm. and was observed after smoking both regular and denicotinized cigarets. The greatest change was a lowering of 4 mm. noted in 1 case in lead 4F, in which the T waves were initially very high. There were no deviations of the RS-T segments. In 18 normal subjects and in 12 with cardiac disease the complexes did not show any changes. No arrhythmias occurred.

When effects on the circulation were apparent, they were observed almost invariably after smoking the first cigaret. This may be taken to indicate that, under the conditions given, there was no cumulative action of nicotine or of whatever substances may have caused the reactions. The duration of the effect on blood pressure, heart rate and cardiac output was usually between thirty and forty-five minutes. If longer, it could often be ascribed to fatigue and restlessness of the subject toward the end of the observation period. Sometimes a slight but progressive fall in output appeared to be associated with greater relaxation.

ILLUSTRATIVE PROTOCOLS

Case 1 (chart 1).—I. McK. was a woman, aged 41 years, without symptoms or signs of cardiovascular disease. She had smoked from ten to fifteen cigarets daily for the previous twenty years. She inhaled habitually and during the test. No unpleasant symptoms occurred while smoking. The maximum changes observed were: systolic blood pressure, plus 6 mm. of mercury; diastolic, plus 8; heart rate, plus 6 beats per minute; cardiac output, plus 8.8 per cent.

The changes in blood pressure and heart rate were slight; *the increase in cardiac output was within the range of normal variation.*

Case 2 (chart 2).—P. S. was a man, aged 45 years, without symptoms or signs of cardiovascular disease. He had smoked from six to ten cigarets daily for the previous twenty-five years. He inhaled habitually and during the test. No unpleasant symptoms occurred while smoking. The maximum changes observed were: systolic blood pressure, plus 28; diastolic, plus 16; heart rate, plus 14; cardiac output, minus 11.0 per cent.

Although there was a well marked rise in systolic and diastolic blood pressure, the heart rate increased only slightly and the cardiac output was diminished to a point just below the range of normal variation.

Case 3 (chart 3).—A. C. was a man, aged 43 years, with coronary heart disease. A mild attack of myocardial infarction had occurred five weeks previously; recovery was rapid and uneventful. He had smoked forty cigarets daily for the previous eighteen years, up to the time of his recent illness. He inhaled habitually and during the test. There were no unpleasant symptoms while smoking. The maximum changes observed were: systolic blood pressure, plus 8; diastolic, plus 6; heart rate, plus 6; cardiac output, plus 0.4 per cent.

The increases in blood pressure and heart rate were slight and the cardiac output remained unchanged.

Case 4 (chart 4).—W. W. was a man, aged 43 years, with coronary heart disease. A mild attack of myocardial infarction had occurred three and one-half months previously, from which he made a good recovery. But he continued to have frequent anginal pains, both on effort and at rest, culminating in a second cardiac infarct two months after these observations were made. He had smoked from thirty to forty cigarets daily for twenty-five years and continued to smoke ten or twelve each day after the first infarct occurred. He inhaled habitually and during the test. No cardiac pain was experienced while smoking. The maximum changes observed were: systolic blood pressure, plus 16; diastolic, plus 10; heart rate, plus 9; cardiac output, plus 6.0 per cent.

There were slight rises in blood pressure and heart rate but there was no increase in cardiac output beyond the range of normal variation.

Case 5 (chart 5).—M. B. was a man, aged 46 years, with coronary heart disease. A severe attack of cardiac infarction, accompanied by congestive heart failure, had occurred five and one-half weeks previously. At the time that the observations on the effects of smoking were made, the heart was well compensated and he was taking digitalis in daily maintenance doses. This was his second attack of infarction, the first having occurred five years before. He had smoked from ten to twelve cigarets daily for twenty-eight years up to the time of the recent illness. He inhaled habitually and during the test, but not deeply. While smoking he did not experience pain or other unpleasant symptoms. The maximum changes observed were: systolic blood pressure, plus 16; diastolic, plus 10; heart rate, plus 15; cardiac output, plus 50 per cent

The rises in blood pressure and heart rate were of the order noted in many other subjects, both with and without heart disease, but there was a striking increase in cardiac output.

COMMENT

It is generally agreed that smoking tobacco causes an increase in blood pressure and heart rate, and constriction of the peripheral blood vessels.[4] The only determinations of cardiac output after smoking were made by Grollman,[5] using the acetylene method. In 5 normal persons, he found no increase except in a habitual pipe smoker, who puffed vigorously on three cigars in rapid succession. Changes in the form of the electrocardiogram have been noted repeatedly and usually have been slight, consisting chiefly of lowering in the amplitude of the T waves.[6] In one healthy young man who complained of dizziness on smoking cigarets, Graybiel, Starr and White[7] observed transient inversion of the T wave in lead 2. Wilson and Johnston[8] reported 2 patients with coronary heart disease in whom smoking a cigaret induced anginal pain and produced displacement of the RS-T segments resembling that seen immediately following infarction of the heart. Such cases are rare.

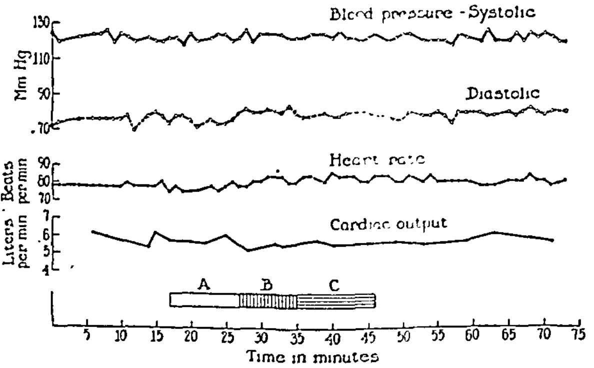

Chart 1 (case 1).—I. McK., a normal woman aged 41 years. *A*, puffing unlighted cigaret. *B*, smoking first regular cigaret. *C*, smoking second cigaret.

Haag[9] demonstrated in animals that the rises in blood pressure and vasoconstriction caused by the intravenous injection of solutions of tobacco smoke were proportional to their nicotine content. But most observers have found no appreciable differences, in man, between the reactions to smoking regular cigarets and those partially denicotinized by a commercial process.[10] There is still disagreement as to whether smoking cigarets which contain no nicotine whatever is without effect on the circulation.[6]

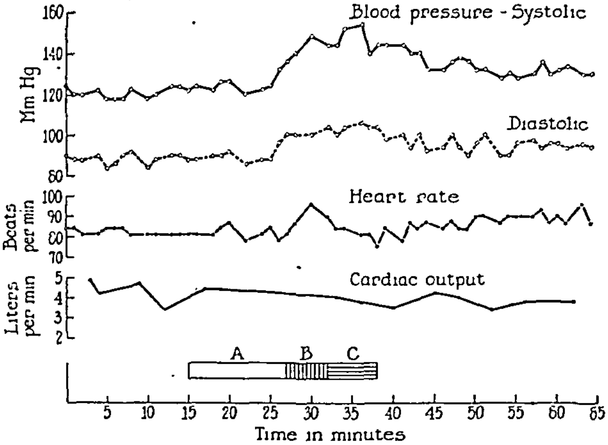

Chart 2 (case 2).—P. S., a normal man, aged 45 years. *A*, puffing unlighted cigaret. *B*, smoking first regular cigaret. *C*, smoking second cigaret.

Consideration of three factors must determine whether smoking cigarets is immediately harmful to the patient with cardiac disease: (1) the effect on the work of the heart, (2) the action on the coronary circulation and (3) individual susceptibility.

The work of the heart, under changing physiologic conditions, depends on the amount of blood ejected and the degree of peripheral resistance. The change in kinetic energy of the ejected blood is small and may be neglected. When the cardiac output is constant the increase in work is proportional to the increase in mean arterial pressure. In these circumstances it seems probable that the rise in blood pressure after smoking is the result of peripheral vasoconstriction. The average increase in pressure in our cases was approximately 15 per cent, which is no more than is caused by any mild physical effort or a slight emotional disturbance. Some evidence of effect, though not at

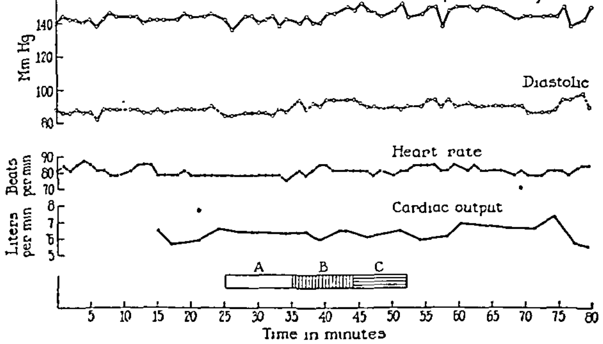

Chart 3 (case 3).—A. C., a man, aged 43 years, who had had a mild cardiac infarction five weeks previously. *A*, puffing unlighted cigaret. *B*, smoking first regular cigaret. *C*, smoking second cigaret.

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[4] Roth, G. M.: The Effect of Smoking Tobacco on the Cardiovascular System, Mod. Concepts Cardiovas. Dis., April 1945, vol. 14, no. 4; May 1945, vol. 14, no. 5.

[5] Grollman, A.: The Cardiac Output of Man in Health and Disease, Springfield, Ill., Charles C Thomas, Publisher, 1932, p. 159.

[6] Evans, W. F., and Stewart, H. J.: The Effect of Smoking Cigarettes on the Peripheral Blood Flow, Am. Heart J. **26**: 78 (July) 1943.

[7] Graybiel, A.; Starr, R. S., and White, P. D.: Electrocardiographic Changes Following the Inhalation of Tobacco Smoke, Am. Heart J. **15**: 89 (Jan.) 1938.

[8] Wilson [illegible] D.: The Occurrence in Angina Pectoris of [illegible] Similar in Magnitude and in Kind to Thos[illegible] Infarction, Tr. A. Am. Physicians **54**: 210, 1939.

[9] Haag, H. B.: The Physiologic Activity of Cigarette Smoke Solutions as Related to Their Nicotine Content, J. Lab. & Clin. Med. **25**: 610 (March) 1940.

[10] Maddock, W. G., and Coller, F. A.: Peripheral Vasoconstriction by Tobacco and Its Relation to Thrombo-Angiitis Obliterans, Ann. Surg. **98**: 70 (July) 1933. Wright, I. S., and Moffat, D.: The Effects of Tobacco on the Peripheral Vascular System, J. A. M. A. **103**: 318 (Aug. 4) 1934. Evans and Stewart.[6]

maximum levels, persisted for thirty to forty-five minutes.

In 1 normal person and in 2 patients with cardiac disease the cardiac output increased significantly. In the case of the normal person, there was a rise in both systolic and diastolic pressures of 12 mm. of mercury. The output increased 17 per cent. During the test he complained of dizziness and sweating. One of the persons with cardiac disease was a man, 22 years old, with advanced though inactive rheumatic heart disease. In this case, the systolic pressure rose 22 mm. and the diastolic 18 mm.; the cardiac output increased 34 per cent. The second patient (case 5, chart 5) was recovering from a severe attack of myocardial infarction; his cardiac output increased 50 per cent. In these 3 cases the augmented output of the heart was the determining factor in causing a significant increase in cardiac work.

The electrocardiogram afforded no evidence of any intrinsic action on the heart muscle or on the coronary arteries. Cardiac pain was not experienced by any of the patients, even by those with known coronary heart disease. Anginal attacks have been ascribed to smoking and the term "tobacco angina" has occasionally been applied to such cases. The condition is certainly uncommon. Osler,[11] in his "Lectures on Angina Pectoris and Allied States," mentions only 2 instances; Allbutt[12] cites 3. Others have reported occasional cases.[13] In a few susceptible persons with diseased coronary vessels nicotine does appear to cause these arteries to constrict.[1] Anginal pain can also occur, in such cases, as the result of increasing the work of the heart sufficiently to induce coronary insufficiency. Probably both mechanisms are concerned.

That there is wide variation in susceptibility to the effects of smoking is common knowledge. Many persons do not use tobacco or discontinue smoking because of unpleasant symptoms, such as sweating, dizziness, headache, tachycardia or extrasystoles. But the vast majority, both men and women, smoke with apparent impunity and with much enjoyment.

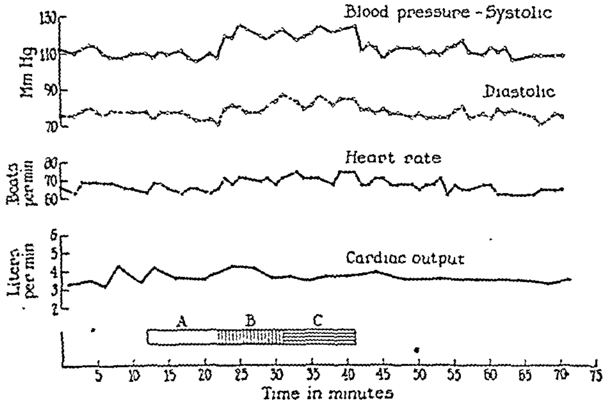

Chart 4 (case 4).—W. W., a man, aged 43 years, who had had a mild cardiac infarction three and one-half months previously. He experienced frequent anginal pains. *A*, puffing unlighted cigaret. *B*, smoking first regular cigaret. *C*, smoking second cigaret.

In this discussion, no attention has been given to the possible role of long-continued smoking in causing atherosclerosis, particularly of the coronary arteries. The evidence favoring this etiologic relationship is scant and unconvincing. For example, to infer its existence because the incidence of coronary sclerosis in young persons is higher in smokers than in nonsmokers[14] is not justified, for there are too many other unknown factors involved. It may well be that the nervous person who smokes heavily is of the constitutional type in which circulatory disease is prone to develop. In rats and rabbits, Thienes and Butt[15] found that control animals showed greater vascular degeneration than did those chronically poisoned with nicotine.

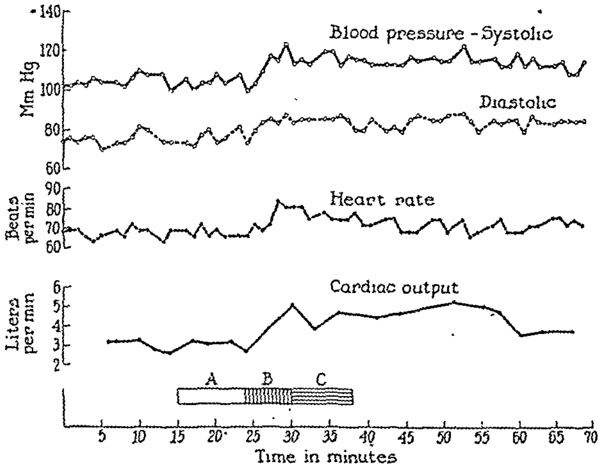

Chart 5 (case 5).—M. B., a man, aged 46 years, who had had a severe cardiac infarction five and one-half weeks previously, accompanied by congestive failure. *A*, puffing unlighted cigaret. *B*, smoking first regular cigaret. *C*, smoking second cigaret.

Our studies, then, indicate that the effects on the heart of smoking two cigarets in succession are relatively slight and are no greater in patients with heart disease than in normal persons. For the person with cardiac disease, moderation in smoking, as in other activities, is to be desired. But moderation is an indefinite term and will vary according to temperament and tolerance for tobacco.

There are certain specific conditions in which smoking should be forbidden because any increase in the work of the heart, however slight, is to be avoided. Among these are congestive heart failure, the acute stages of cardiac infarction and active rheumatic carditis. No patient with peripheral vascular disease should use tobacco because of its constricting action on the peripheral circulation. Those who are aware of discomfort after smoking will probably fare better by abstaining, regardless of the presence of a cardiac disorder. As yet, no satisfactory objective clinical test is available for selecting those who are unusually sensitive to the effects of tobacco on the heart.

SUMMARY AND CONCLUSIONS

Observations were made on the effects of smoking regular and commercially denicotinized cigarets in normal persons and in patients with various forms of cardiac disease. The indexes used were changes in cardiac output as determined by the ballistocardiograph, changes in heart rate and blood pressure and alterations in the form of the electrocardiogram.

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[11] Osler, W.: Lectures on Angina Pectoris and Allied States, New York, D. Appleton & Company, 1897, p. 106.

[12] Allbutt, T. C.: Diseases of the Arteries, Including Angina Pectoris, London, Macmillan & Co., Ltd., 1915, vol. 2, p. 244.

[13] Moschcowitz, E.: Tobacco Angina Pectoris, J. A. M. A. **90:** 733 (March 10) 1928. Ralli, E. P., and Oppenheimer, B. S.: Changes in the Peripheral Circulation Accompanying Tobacco Angina, Proc. Soc. Exper. Biol. & Med. **26:** 9, 1928. Pickering, G. W., and Sanderson, P. H.: Angina Pectoris and Tobacco, Clin. Sc. **5:** 275 (Dec. 12) 1945. Wilson and Johnston.[4]

[14] Glendy, R. E.; Levine, S. A., and White, P. D.: Coronary Disease in Youth: Comparison of One Hundred Patients Under 40 with Three Hundred Persons Past 80, J. A. M. A. **109:** 1175 (Nov. 27) 1937. English, J. P.; Willius, F. A., and Berkson, J.: Tobacco and Coronary Disease, ibid. **115:** 1327 (Oct. 19) 1940.

[15] Thienes, C. H., and Butt, E. M.: Chronic Circulatory Effects of Tobacco and Nicotine, Am. J. M. Sc. **195:** 522 (April) 1938.

The results were submitted to statistical analysis. There were no significant differences in response either between the normal group and the cardiac group, or between those who smoked regular and denicotinized brands.

The averages of the maximal changes observed, in both normal persons and persons with cardiac disease, showed a slight rise in systolic and diastolic blood pressures, as well as a slight increase in heart rate. In neither group was there a significant change in the average cardiac output. Changes in the form of the electrocardiogram occurred in less than half of the subjects in each group. These were slight and consisted most frequently of diminished amplitude of the T waves. Deviations of the RS-T segments were not encountered. No arrhythmias occurred.

There was considerable variability in the effects of smoking in both normal persons and persons with cardiac disease. This depended to a greater extent on individual susceptibility than on the presence of disease.

Smoking cigarets did not cause cardiac pain in any of the subjects, including those with coronary heart disease. "Tobacco angina" is extremely rare.

Except in susceptible persons, smoking cigarets causes only slight changes in the circulation and does not increase significantly the work of the heart. Because of the enjoyment afforded and the emotional satisfaction obtained, patients with inactive forms of heart disease may be permitted to smoke in moderation. This conclusion does not apply to those who suffer from peripheral vascular disorders.

The more important cardiac conditions in which smoking should be forbidden are congestive heart failure, the acute stages of cardiac infarction and active rheumatic carditis.

ABSTRACT OF DISCUSSION

DR. A. R. BARNES, Rochester, Minn.: Numerous investigations on the effect of nicotine on the circulation and metabolism in man have shown that nicotine increases the systolic blood pressure 10 to 25 mm. of mercury and the diastolic blood pressure 7 to 25 mm. of mercury. Smoking elevated the average systolic blood pressure 39.7 mm. of mercury and the diastolic blood pressure 28.1 mm. of mercury in a series of patients with hyperreactive blood pressure (Herrell and Cusick). Smoking increases the heart rate 10 to 13 beats per minute, but this increase tends to diminish with increasing age of the patient. A prompt fall in the surface temperature of the extremities follows the smoking of two cigarets and a marked peripheral vasoconstriction occurs. In patients with hyperreactive blood pressure smoking produced an average decrease of 22 per cent in the caliber of the retinal vessels. The basal metabolic rate was increased from 4 to 8 per cent by smoking. Numerous observers have reported a decrease of 1 to 4.5 mm. in the height of the T wave of the electrocardiogram following the smoking of two cigarets. I have seen occasional patients in whom smoking two cigarets would invoke an attack of angina pectoris, and similar observations have been reported by others. Most of such patients have been found to have significant elevation of blood pressure after smoking and are to be regarded as hyperreactors. It is not possible to measure the effect of nicotine in the coronary blood flow in man, but it has been shown that it decreases the blood flow in the coronary arteries of the dog. In one investigation nicotine was administered to dogs before ligation of a coronary artery, and its effects on the electrocardiogram were studied. After ligation of a coronary artery only one fourth as much nicotine as before operation was required to produce marked electrocardiographic changes. English, Willius and Berkson showed that a significantly, though not strikingly, greater number of patients with coronary disease smoked as compared to patients without coronary disease. Glendy and White compared the smoking habits of 100 patients under 40 years of age who had coronary disease with those of patients above 80 years of age and without coronary disease. Fifty-five per cent of the older group smoked as compared to 93.3 per cent of the younger group. Only 4.2 per cent of the older group were heavy users of tobacco, compared with 58 per cent of the younger group. There is no incontestable evidence that nicotine causes or intensifies the average case of coronary disease. The facts which I summarized make me cautious in concluding that I may advise patients with coronary disease that smoking is not harmful to them.

DR. DAVID ADLERSBERG, New York: Dr. Levy and co-workers found no significant differences after smoking of two cigarets in the ballistocardiogram and electrocardiogram, and no significant differences in the heart rate, blood pressure or cardiac output in normal persons and in patients with cardiac disease. They concluded that patients with inactive forms of heart disease may be permitted to smoke moderately. The data presented by the authors have been statistically evaluated. I wonder whether application of these short term experiments to the general question of smoking in disease of the coronary arteries is justified. Our knowledge of the etiology and pathogenesis of disease of the coronary arteries is limited. The situation is somewhat similar to the one that existed some years ago in the field of endocarditis. Since then we learned to separate and characterize the various forms of endocarditis on the basis of etiology, pathology, clinical course and response to therapy. Disease of the coronary arteries is at present a real *mixtum compositum*. We are probably dealing with various morbid processes which have one thing in common, the localization in the coronary arteries. It will be extremely important in the future to separate and classify these different entities. Our own studies of disease of the coronary arteries in young persons indicate that in about 30 per cent of them a hereditary disorder of the metabolism of lipids, especially of cholesterol, represents an important pathogenetic factor. Another group represents the arteritis type of disease of the coronary arteries, in some way related to thromboangiitis obliterans and/or similar forms of arterial disease. It is generally accepted that patients with peripheral vascular disease, especially thromboangiitis obliterans, should not smoke because of the constricting action of nicotine on the peripheral circulation, and Dr. Levy and other experienced clinicians forbid smoking in this disease. Since some instances of disease of the coronary arteries appear pathogenetically related to this or similar arterial diseases, I am not convinced that long-continued smoking will be tolerated without harm in all cases of chronic disease of the coronary arteries. Although the patients in Dr. Levy's group did not experience anginal pain after smoking of two cigarets, we all have had experience with heavy smokers whose attacks were greatly relieved after they stopped smoking. Dr. Levy compromises and permits patients with chronic forms of coronary heart disease to smoke "in moderation." There is no reliable criterion for the establishment of susceptibility to tobacco. Patients with disease of the coronary arteries should not smoke, as a rule. Only occasionally in tense and high strung persons, who simply cannot give up smoking because of the emotional satisfaction, may an exception to this rule be reluctantly permitted.

DR. H. S. CONNAMACHER, Newark, N. J.: In 1939, while I was spreading inorganic fertilizer, I was suddenly seized with a severe pain in the chest. The pain was coronary in character, lasting about ten minutes, and thereafter reappeared on physical exertion, excitement, chilling and lying on the left side. A cardiologist found no evidence of damage to the heart. The size, contour, electrocardiogram, blood pressure, pulse rate and auscultatory signs were all normal. A colleague, who specializes in allergy, found me slightly susceptible to tobacco, wool and dust. My tonsils were removed and their bacterial contents cultured. I was tested with these and found sensitive to hemolytic streptococci and to catarrhal cocci. I had been a moderate smoker of cigars and pipe. I discontinued smoking, but the pain diminished only gradually and did not disappear until six months had elapsed. After that I was apparently normal. Then I began to doubt that tobacco was a factor and began smoking cigars again, about two a day. In less than a week the pain was back, exactly as before. Again I stopped smoking, but the pain persisted, with gradual diminution over a period of about three months. I did not smoke any more for three years. Again I tried it and again the pain came back. This time it took four months after I stopped smoking to return to normal. The following summer I climbed Mount Washington on the Tuckerman Ravine trail, and had no more discomfort during or after the climb than any of my three apparently healthy companions. A year and a half ago I began accepting an occasional cigaret from friends—no cigars—maybe one a day or one every two days, and for about six months I had no discomfort whatever, until last July the same condition, just as severe, was back. Again I was examined by a cardiologist, who could find nothing abnormal in my heart. This time the improvement was much slower than before, the pain after one year has not yet left entirely. My reasons for bringing this to your attention now is that while smoking there were no symptoms whatever, only perfect enjoyment of the cigar or pipe. The pain in every episode did not appear until I had been smoking some days, and the pain persisted for long periods of time after the cessation of smoking. These, I believe, indicate a gradual cumulative effect, comparable to that which is found in Buerger's disease.

Dr. Herbert F. Robb, Belleville, Mich.: If the smoking of cigarets has no apparent immediate harmful effects on the heart of either the normal adult person or of those with cardiac disease, one might get the impression that smoking cigarets would have no harmful effects on any one. We should guard against such an erroneous conclusion. The effects of smoking cigarets are not only biologic. Smoking does give some persons a certain amount of emotional stability. But smoking may have physiologic, economic and moral repercussions which may be experienced to a greater degree by those in the low income group than by those who are economically secure. Although the laboratory findings may not indicate any harmful cardiac effects in the adult who smokes, nevertheless the use of cigarets by adolescents is too often disastrous in that it may mask the symptoms of existing vitamin and nutritional deficiencies, and mental and social maladjustments peculiar to that age of rapid growth and change from childhood to adulthood. Not only are there vitamin deficiencies prevalent at this age, as might be expected from the rapid increase in body growth, but also vitamin deficiencies as the result of inadequate diet. If boys or girls from 12 to 18 years of age with thiamine and other nutritional deficiencies resort to smoking for their physical and emotional stability they will take the burden off an adequate diet, their thyroid glands, adrenal glands, liver and other glands of internal secretions and their autonomic nervous system. By depending on the drug they do not develop character or physical and moral stamina to the extent that they would if they did not use it. Moderate or severe deficiencies of thiamine hydrochloride and the use of drugs to mask the symptoms are important factors in the development of delinquent children. To permit to go unchallenged the impression that smoking cigarets does no harm to youth even above 16 years of age would be to neglect an issue with which we are all concerned, namely the physical and moral stability of present and future America. We cannot consider the smoking of cigarets only from a biologic point of view. The smoking of cigarets is also a political, economic, psychiatric and moral problem, especially with youth between the ages of 12 and 18 years.

Dr. R. L. Levy, New York: It was to be expected that our point of view with regard to smoking would stimulate some dissenting comments. A number of the questions raised by the discussers are answered in the fuller paper which is to be published; a few may be touched on now. With regard to figures given in the literature indicating that the effects of smoking, both on the heart and the peripheral circulation, are less marked in the older age groups, it may be said that statistical analysis of these figures does not reveal significant differences between the reactions of the youthful and the aged. Again, because nonsmokers live longer than smokers, and because coronary sclerosis is more frequent in young persons who smoke than in those who do not, it does not necessarily follow that smoking is responsible for these differences. There are so many unknown variables, of which one of the more important is the constitutional factor. Heavy smokers may well be of the type susceptible to arterial degeneration. There are also those who are hypersensitive to the action of tobacco, as has already been indicated. Certainly it is reasonable to assume that any one who is aware of unpleasant symptoms as the result of smoking will fare better if he abstains from the use of tobacco. It is to be hoped that a simple, objective clinical test may be developed for the detection of hyperreactors to nicotine. I do not agree that most habitual smokers would rather stop entirely than indulge moderately. Many are content with a curtailed tobacco ration and obtain much pleasure from it. Over a period of years, we have seen a large number of patients with inactive cardiac lesions continue to smoke without apparent harm. Because of this fact and in the light of the observations just reported, we consider it proper, until sound evidence to the contrary is forthcoming, to permit certain of these persons to indulge in a habit which affords so much satisfaction and enjoyment.

AGRANULOCYTOSIS AND HEPATOCELLULAR JAUNDICE

Toxic Reactions Following Propylthiouracil Therapy

HAROLD J. LIVINGSTON, M.D.
and
SAUL F. LIVINGSTON, M.D.
Brooklyn

The increasing incidence of toxic reactions following thiouracil therapy is well known today. As a substitute for this drug Astwood and Vanderlaan [1] recommended propylthiouracil. There were no significant side effects encountered in their series of 100 cases. Reveno [2] in his observations on 54 patients found no evidence of toxic effect on the blood or blood-forming tissues. The only side effects encountered by the aforementioned authors were pruritus, urticaria and drug fever. Bartels [3] has given propylthiouracil to 450 patients at the Lahey Clinic with a toxicity incidence of 2 per cent. There has been 1 case of agranulocytosis, 5 cases exhibiting depressed leukocyte counts and 1 case revealing a typical fever response. In the reports received thus far, Hardy [4] knows of 1 case of agranulocytosis (Bartels') and states that a number of patients showed a drop in the leukocyte count, which soon rose despite the continuation of the drug.

It is not the intention to comment on the efficacy of propylthiouracil but to point out that toxic effects can and do occur. The most frequent and severest complications of thiouracil therapy are granulocytopenia, leukopenia, drug fever and dermatitis. The appearance of jaundice has been reported, but its incidence has been small. The patient in the case reported here developed both agranulocytosis and hepatocellular jaundice following the use of propylthiouracil.

The most effective treatment of agranulocytosis due to thiouracil has been the parenteral administration of

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Owing to lack of space, this article is abbreviated in The Journal by omission of the tables. The complete article will appear in the authors' reprints.

[1] (a) Astwood, E. B., and Vanderlaan, W. P.: Treatment of Hyperthyroidism with Propylthiouracil, Ann. Int. Med. **25**: 813 (Nov.) 1946; (b) Thiouracil Derivatives of Greater Activity for the Treatment of Hyperthyroidism, J. Clin. Endocrinol. **5**: 424 (Dec.) 1945.

[2] Reveno, W. S.: Propylthiouracil in Thyrotoxicosis, J. A. M. A. **133**: 1190 (April 19) 1947.

[3] Bartels, E. C.: Personal communication to the authors, May 5, 1947.

[4] Hardy, S. M.: Lederle Laboratories, Inc., Pearl River, N. Y., personal communication to the authors.

penicillin. Vorhaus and Rothendler[5] recommend 1,000,000 units daily instead of the 500,000 units per day suggested by the Council on Pharmacy and Chemistry of the American Medical Association.[6] Beneficial results obtained by other measures such as the administration of "pentnucleotide" N. N. R., yellow bone marrow extracts, folic acid, pyridoxine and blood transfusions have been controversial and difficult to evaluate. The most important aim is to prevent the development of overwhelming sepsis which frequently occurs when there is pronounced diminution or absence of granulocytes. Often granulocytopenia will improve spontaneously as soon as the drug is withdrawn. Recently we have observed infections in which the organisms were sensitive to penicillin, with improvement on penicillin therapy. During the course of treatment there would be a reinfection by another organism sensitive to streptomycin, and the addition of the latter drug would control the new invader. In addition to 1,000,000 units of penicillin, our patient received 1 Gm. of streptomycin a day. The presence of anemia and evidence of hepatocellular damage necessitated the use of small blood transfusions, parenteral vitamins, liver extract, dextrose and amino acids in addition to a high caloric, high vitamin diet. These measures were directed chiefly toward the maintenance of general nutrition.

REPORT OF CASE

F. M. is a white widow aged 68 with a known enlargement of the thyroid gland for the past fifteen years. In 1939 she was told that her heart rhythm was irregular and her blood pressure was elevated. She was placed on digitalis and was getting along fairly well until September 1944 when a right radical mastectomy was performed for an adenocarcinoma of the breast. She was followed in the outpatient department of a neighborhood hospital, where roentgenologic studies of her chest and bones failed to reveal any evidence of metastasis. In January 1945 she manifested signs of mild congestive cardiac failure and despite a fairly good appetite was losing weight. It was the impression that her condition was due to a thyrotoxicosis and she was given strong solution of iodine (Lugol's solution) for a period of three weeks; there was subjective and objective improvement. Thiouracil therapy was started on May 22, 1946. She received 0.2 Gm. per day for the first week, 0.3 Gm. for the second week and returned to 0.2 Gm. per day for the third week. The dosage of the drug was discontinued because the patient complained of gastrointestinal disturbances. The results of the basal metabolic studies and blood counts may be seen in table 1. In surgical consultation it was considered that surgical intervention was contraindicated because the patient was a poor operative risk. The situation was made easier because the patient refused to permit surgical intervention. Small doses of strong solution of iodine were reinstituted, and on Nov. 25, 1946 the patient was admitted to the hospital because of a poor cardiac reserve. She improved on rest in bed, a salt free diet and digitalization. Postoperative radiation to the supraclavicular area (2,538 r) and axilla (2,900 r) was completed at this time, and the patient was discharged on Dec. 18, 1946. The patient continued to take small doses of strong solution of iodine. Her appetite was good, but there was no gain in weight and her general condition of weakness and easy fatigability remained unchanged. She was readmitted to the hospital, and propylthiouracil therapy was instituted on Jan. 17, 1947. She received 200 mg. of the drug a day for the first week and 150 mg. a day thereafter until her discharge on Feb. 6, 1947. Throughout her stay the cardiac status was under control and she continued on a maintenance dose of digitalis. There was a gain in weight of 4 pounds (1.8 Kg.) and moderate improvement on discharge. Casual urine specimens were negative except for a trace of albumin on one occasion. The results of the blood counts and basal metabolic studies may be seen in table 1.

The patient was seen on Feb. 19, 1947, at which time she was extremely emotional and complained of nervousness, palpitation, weakness and rapid tiring. Physical examination revealed a well developed and fairly well nourished woman 68 years of age. There was no dyspnea, orthopnea or cyanosis. The scleras were clear. There was no exophthalmos, and ophthalmoscopic examination revealed a grade 2 fundus. The skin was warm, flushed and moist; there were fine tremors of the outstretched hands and of the extended tongue. The gums were retracted and edentulous. There was no distention of the neck veins; the thyroid gland was enlarged and asymmetric. The right lobe was nodular, about three times its normal size and extended down to and below the suprasternal notch. There was no bruit. The right breast was absent and the left was soft, with no evidence of tumefaction. The radical mastectomy scar was soft and pliable; there was no evidence of local recurrence. The lungs were clear to percussion and auscultation. The heart sounds were of fair quality with a soft systolic murmur at the apex and base. The electrocardiogram revealed an auricular fibrillation, an average ventricular rate of 80 with digitalis effect. The blood pressure was 200 systolic and 90 diastolic. On percussion the liver was palpable to 2 fingerbreadths below the right costal margin. There was no edema of the extremities.

The basal metabolic rate was plus 37 per cent, and the weight of the patient was 118 pounds (53.5 Kg.). The patient was ordered to bed for the first week with bathroom privileges and placed on a highly nutritious diet supplemented with vitamins. In addition she received sedation and was on a maintenance dose of digitalis. Treatment with propylthiouracil,[7] 150 mg. a day, was started on Feb. 29, 1947. The following two weeks showed no striking change in her general condition, and the dosage of propylthiouracil was increased to 200 mg. a day. She gained 2 pounds (0.9 Kg.) within the next two weeks and began to show definite improvement. The patient felt stronger, was able to get around much better and was less emotional. There were no complaints, but after being on the drug for six weeks there suddenly developed general malaise, chills and a temperature ranging between 103 and 104 F. Examination at this time revealed that the patient was extremely restless and toxic. Other than a moderately injected throat there was no evident gross pathologic condition to account for the symptomatology. All drugs were immediately discontinued, and a white blood count revealed a total of 1,000 cells with no granulocytes.

The patient was admitted to the Jewish Hospital of Brooklyn on April 19, 1947. She was immediately placed on a regimen of intramuscular penicillin, 1 million units daily. She continued to appear extremely toxic and was mentally confused. The tongue was coated, and a grayish exudate was present on the uvula. The temperature the first day ranged between 104 and 105 F. Another examination of the blood revealed a hemoglobin level of 60 per cent, a red blood cell count of 3.04 million and a white blood cell count of 1,050 with no granulocytes. A bone marrow aspiration revealed an absence of granulocytic elements. There were occasional degenerated myelocytes, premyelocytes and myeloblasts. There were many smudges (probably degeneration products of the granulocytic series). The megakaryocytes were normal in number, and even these showed all stages of degeneration. The erythroblastic elements were present. In addition to the penicillin, the patient received a 300 cc. transfusion of blood on the first hospital day. The following day there was an icteric tint to the scleras, and the condition of the patient remained unchanged. It was considered that the jaundice was hepatocellular and not hemolytic. This was confirmed by the reports and follow-up of the chemical studies on the blood (table 2). Streptomycin, 1 Gm. per day, given intramuscularly, was started on the third day. The patient's course continued stormy for the first week, and the temperature remained elevated (see the accompanying chart). The patient was drowsy and at times was incontinent of stools and urine.

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5. Vorhaus, M. G., and Rothendler: Penicillin in Agranulocytosis, Correspondence, J. A. M. A. **130:** 966 (April 6) 1946.

6. Van Winkle, W., Jr., and others: The Clinical Toxicity of Thiouracil: A Survey of 5,745 Cases, report of the Council on Pharmacy and Chemistry, J. A. M. A. **130:** *343* (Feb. 9) 1946.

7. The propylthiouracil was supplied by Dr. Stanton M. Hardy, Lederle Laboratories, Inc., Pearl River, N. Y.

different groups, the therapy of each type of bulbar poliomyelitis will be described separately. The predominant therapeutic problem common to all groups is the prevention or correction of hypoxia. Secondary only to this is the maintenance of nutrition and prevention of secondary infections.

I. CRANIAL NERVE NUCLEI GROUP

Bulbar poliomyelitis with involvement of the cranial nerve nuclei is the most commonly recognized type. These patients may have paralysis of any of the motor cranial nerves, producing ophthalmoplegias, facial paralysis, etc. If the tenth nerve is spared, there is little danger to life. In a facial paralysis one may have to protect the cornea of the eye by suture of the lids, but generally no special treatment is necessary. However, when the tenth cranial nerve is involved there is impairment of swallowing and faulty innervation of the larynx. This presents a serious threat to the life of the patient by obstruction of the airway.

These patients will complain of difficulty in swallowing and will have pooling of saliva in the throat. In children one frequently notes regurgitation of fluid through the nose. The speech often has a nasal quality and may be hoarse from faulty innervation of the vocal cords. An occasional patient is unable to talk. If these symptoms are mild, the patient should have a special nurse in attendance to afford constant observation. Feeding by nasal tube or parenteral administration of fluids is indicated. In selected cases of mild disease careful spoon feedings may be used.

Pooling of secretions in the throat and impaired speech indicate an impending obstruction of the airway. It has been pointed out in previous publications[3] that anxiety, restlessness and other mild encephalitic symptoms also indicate hypoxia and that these symptoms clear up after adequate oxygenation. Therefore the appearance of these symptoms in the presence of difficulty in swallowing must be interpreted as partial obstruction of the airway until proved otherwise.

Of the 183 patients with bulbar poliomyelitis, 100 had symptoms limited to the cranial nerves. There were 5 deaths in this group. Four of these deaths occurred before an airway could be secured. The fifth death occurred from aspirated vomitus occluding the tracheotomy. All 5 deaths resulted directly from obstruction of the airway.

Maintaining an unobstructed airway is of first importance in the care of these patients. Wilson[4] reviewed this problem and recommended postural drainage, aspiration of the throat and, in a few selected cases, tracheotomy. Davison,[5] Galloway,[6] Glaser[7] and Nelson-Jones and Williams[8] have also discussed the use of tracheotomy in bulbar poliomyelitis. The last-mentioned authors emphasized that tracheotomy should not be left until the patient is in extremis. In a previous publication[1] we pointed out with illustrative cases that death might occur from sudden apposition of the vocal cords before a tracheotomy could be performed. Undue delay in performing a tracheotomy may subject the patient to a severe hypoxic insult and an increased danger of pulmonary edema, which markedly reduces the chance of recovery.

For these reasons it may be wise to perform early elective (prophylactic) tracheotomy in selected cases of bulbar poliomyelitis involving the lower cranial nerves. The following criteria have been utilized by us in deciding on elective tracheotomy in bulbar poliomyelitis: recent onset of bulbar symptoms with evidence of progression of the illness during the period of observation; general appearance of toxicity, especially with high temperature and rapid pulse; progressive difficulties in swallowing or the accumulation of secretions in the throat, and mental changes, especially anxiety, apprehension, hyperactivity, confusion or euphoria in a patient with difficulty in swallowing.

The appearance of laryngeal stridor, dyspnea despite adequate chest excursions, cyanosis and severe encephalitic symptoms indicates serious obstruction of the airway and requires emergency intubation or tracheotomy. In patients with partial or complete obstruction of the airway, there are strong inspiratory efforts in an attempt to overcome the hypoxia. These inspiratory efforts in the face of an obstruction produce a relatively great negative pressure in the bronchioles and alveoli. This negative pressure in effect sucks fluid, plasma and even red blood cells out of the pulmonary capillaries into the alveoli, producing acute pulmonary edema. For this reason patients suspected of having had a period of obstruction of the airway should receive oxygen therapy, preferably under some positive pressure to combat pulmonary edema and maintain adequate oxygenation. Oxygen therapy may be given via the tracheotomy cannula by use of a tracheotomy inhalator mentioned in the next paragraph.

After a tracheotomy the patient with bulbar poliomyelitis still requires constant care by special nurses. It is necessary to continue to aspirate the accumulation of fluids in the pharynx. During the first days following a tracheotomy there often is considerable tracheal secretion requiring aspiration. The inner tracheal cannula is inspected and cleared frequently. The tracheal secretions become viscid unless the inspired air is adequately humidified. Two cold humidifiers in the average room provide adequate humidification. This method, however, makes the room uncomfortable. It is much more satisfactory to deliver moistened air and oxygen mixtures direct to the tracheotomy tube by using a tracheotomy inhalator. The apparatus used has been described in another communication.[9] The tracheotomy inhalator has the added advantage of permitting the delivery of oxygen mixtures of various percentage concentrations under optimal positive pressure. This feature is of even greater importance in patients with involvement of the autonomic centers for respiration and circulation in the medulla.

II. RESPIRATORY CENTER GROUP

Patients dying of involvement of the respiratory center have shown destruction of the ventral portion of the reticular substance of the medulla.[1] Clinically most of these patients early in the illness show evidence of involvement of the cranial nerve nuclei. They later develop, in the face of adequate airway and respiratory musculature, variations in the rate and depth of respirations with prolonged intervals between inspiration. At this point they generally show anxiety, restlessness, increasing pulse rate and some elevation of blood pressure, which are symptoms of hypoxia, even though there is no clinical cyanosis. These symptoms mean impending failure of the central respiratory mechanism. Oxygen therapy should be started or increased. The effectiveness of the oxygenation can be followed by the use of the Milliken oximeter and checked by determinations of arterial oxygen. Details of the use of the oximeter in poliomyelitis are being reported by Hemingway and Elam.[10] In brief, this instrument determines the relative concentration of oxyhemoglobin to reduced hemoglobin by means of a photoelectric cell. It helps establish the efficiency of the measures taken to promote oxygenation. It is also possible by using the oximeter to establish the need for and the effectiveness of mechanical artificial respiration.

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[3] Brown and Baker.[1] Brown, Baker, Adams and McQuarrie.[2]

[4] Wilson, J. L.: Prognosis of Poliomyelitis and Treatment of the Commonly Fatal Types, J. Michigan M. Soc. **42**: 955 (Dec.) 1943.

[5] Davison, W. C.: Poliomyelitis: A Résumé, Am. J. Dis. Child. **52**: 1158 (Nov.) 1936.

[6] Galloway, T. C.: Tracheotomy in Bulbar Poliomyelitis, J. A. M. A. **123**: 1096 (Dec. 25) 1943.

[7] Glaser, D. F.: Tracheotomy in Bulbar Poliomyelitis, J. Pediat. **27**: 560 (Dec.) 1945.

[8] Nelson-Jones, A., and Williams, R. H. H.: Tracheotomy in Bulbar Poliomyelitis, Lancet **1**: 561 (May 5) 1945.

[9] Kubicek, W. G.; Holt, G.; Elam, J.; Brown, J. R., and Gullickson, G.: Oxygen Therapy in Poliomyelitis: A Tracheotomy Inhalator, to be published.

As failure of the respiratory center in the medulla progresses, there are increasing periods of apnea with Cheyne-Stokes periodic respiration. Confusion, delirium and coma appear. Atelectasis and extensive hemorrhagic pulmonary congestion are common at this point and are indicated clinically by cyanosis and impaired chest excursion even in a mechanical respirator. These symptoms require immediate intensification of oxygen therapy. However, the concentration of oxygen used should ordinarily not exceed 60 per cent. In emergencies it may be necessary to use 100 per cent oxygen for a limited period of time. Oxygen under positive pressure of 2 to 6 cm. of water increases the exchange of gas at the alveoli. This positive pressure assists in combating pulmonary edema. If the chest excursions are not powerful enough to produce expiration against positive pressure oxygen a mechanical respirator is required. The vest type respirator or the standard iron lung type may be used. In either case the respirator flap valve should be adjusted so that alternating positive and negative pressure is applied to the chest wall in order to force expiration against the positive pressure oxygen mixture being administered via the tracheotomy. A tracheotomy is essential in any of these patients who are put in a respirator because the mechanical respiratory excursions will produce severe pulmonary edema if there is any obstruction to the airway. Any manipulation, such as frequent suction of the trachea, which interferes with oxygenation should be avoided. Sedation of patients in this group should be avoided or used with extreme caution because of the depressant effect on an already damaged respiratory center.

Of the 183 patients with bulbar poliomyelitis, 36 were classified clinically as belonging to the respiratory center group, with 69.1 per cent mortality for the group. Five of these patients were put in respirators without receiving a tracheotomy, and 100 per cent of these patients died. There was a 64.5 per cent mortality among the remaining 31 patients. Of the 36 patients in the respiratory center group, 7 had symptoms of failure of the circulatory center in addition to respiratory symptoms.

III. CIRCULATORY CENTER GROUP

During the epidemic 12 patients were seen in whom failure of circulation was the outstanding clinical finding. There was a mortality of 83.3 per cent in this group. Patients with involvement of the circulatory center present a dusky red florid appearance. The pulse rate is out of proportion to the elevation of temperature and ranges from 150 to 200. The rhythm is irregular and the pulse is thready. The blood pressure varies from elevated to low levels and the pulse pressure may be as low as 10 mm. of mercury. Anxiety and restlessness are always present. As circulatory failure progresses the patient's blood pressure drops to shock levels, the pulse becomes imperceptible and the skin becomes cold and clammy and shows mottled cyanosis. There are delirium, coma and terminal hyperthermia. Treatment in this group is unsatisfactory if the symptoms become at all severe. Intensive oxygen therapy should be instituted early, and tracheotomy should be performed on the slightest indication of obstruction of the airway. Supportive measures in combating shock have been of only temporary benefit in our experience. In cases of milder disease such measures may tide the patient over until vasomotor control is reestablished by the nervous system.

IV. ENCEPHALITIC GROUP

Encephalitic symptoms occur commonly in bulbar poliomyelitis and are universal among the more severely ill patients. In 15 of the 183 patients with bulbar poliomyelitis, the encephalitic symptoms were the outstanding clinical feature. These symptoms include anxiety, restlessness, hyperexcitability, muscular tremors and twitchings, irritability and confusion, lethargy and coma, and convulsions, especially in children. When such symptoms appear they first should be considered to be due to hypoxia even if there is no cyanosis. Such a state of hypoxia may be produced by an unrecognized partial obstruction of the airway, a failure of central control of respiration or circulation, an inadequate function of diaphragm and intercostal muscles, an acute pulmonary edema or an atelectasis and hemorrhagic pulmonary congestion. Once the exact causative factor has been discovered, the corresponding therapy can be instituted. Only when these cerebral symptoms persist after adequate oxygenation is achieved should they be ascribed to actual involvement of the cortex by the virus. Of the 15 patients with encephalitic symptoms as the outstanding manifestation only 1 died.

COMBINED BULBAR-CERVICAL CORD GROUP

Many patients with bulbar poliomyelitis also have some involvement of the spinal cord. A few have such severe involvement that they require a respirator because of paralysis of the diaphragm and intercostal muscles. These patients pose a special problem of treatment and for that reason are placed in a separate group.

These patients may also show cranial nerve palsies, encephalitic symptoms and signs of involvement of the cardiorespiratory center in addition to paralysis of the diaphragm and intercostal muscles. It is essential in these patients to insure an open airway before placing the patient in a respirator or to maintain an open airway once the patient is in the respirator. Inspiration forced by the respirator against a partially obstructed airway creates relatively marked negative pressure in the alveoli, sucking fluid out of the pulmonary capillaries and producing acute pulmonary edema. This situation can be avoided by the early use of tracheotomy. If pulmonary edema is present or suspected, oxygen therapy preferably under positive pressure should be started. A modified respirator head has been developed for these cases. To adapt the standard design respirator for a patient with a tracheotomy the upper part of the respirator head was tilted forward about 6 inches (15.2 cm.) and welded in this position. This made the patient's throat accessible as far as the sternal notch. In addition, a cone-shaped rubber collar has been substituted for the ring-shaped sponge collar in order to afford even greater access to the tracheotomy and to promote the comfort of the patient. This equipment will be described in detail in further publications.

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[10] Hemingway, A., and Elam, J.: Pulmonary Function in Poliomyelitis: Oximetry Studies in Spinal and Bulbar Patients, to be published.

Patients in this group have great difficulty raising their tracheobronchial secretions. For this reason they are subject to atelectasis and hemorrhagic pulmonary congestion. Bronchoscopy was found to be useful in some selected cases and was done through the tracheotomy opening in some patients. It is essential to maintain high humidification of the inspired gas mixtures delivered to the tracheotomy. It is also helpful to nebulize penicillin in saline solution down the trachea at intervals. If positive pressure oxygen is used tracheally during the expiratory phase of respiration, the flap valve on the respirator should be adjusted to exert some positive pressure on the chest wall during expiration. The oximeter is of great value in estimating the efficiency of the therapeutic measures and in determining how long the patient can be left out of the respirator. It is possible to detect a fall in arterial oxygen before the patient feels fatigued and before clinical signs of hypoxia appear.

Summary of Symptoms and Treatment in Various Types of Bulbar Poliomyelitis

Symptoms	Treatment
Bulbar-Cranial Nerve Nuclei Group	
1. Difficulty in swallowing 2. Regurgitation of food and fluids through nose (particularly in children)	Parenteral feeding; nasal feeding
3. Pooling of secretions in throat (salivation?) 4. Nasal speech; hoarseness; inability to talk	Impending obstruction of airway Postural drainage; suction; elective tracheotomy
5. Stridor; dyspnea; cyanosis (obstructed airway)	Emergency intubation and/or tracheotomy
6. Anxiety and restlessness (hypoxia)	Oxygen therapy, tent, mask, etc., humidified
7. Other cranial nerve involvements; ophthalmoplegias; facial palsies	No treatment necessary
Bulbar-Respiratory Center Group	
1. Adequate function of respiratory muscles 2. Adequate airway	
3. Variations in rate and depth of respirations (impending failure; observe carefully) 4. Prolonged intervals between respirations 5. Anxiety, restlessness, increasing pulse rate (hypoxia)	Oxygen therapy (elective tracheotomy)
6. Increasing periods of apnea 7. Confusion, delirium, pulmonary congestion (anoxia) 8. Cyanosis	Tracheotomy Respirator Intensive oxygen therapy with positive pressure, if possible; sedation with extreme caution
Bulbar-Circulatory Center Group	
1. Dusky red, flushed, florid appearance 2. Rapid (150-200) pulse 3. Irregular, thready pulse 4. Elevated blood pressure; decreased pulse pressure 5. Anxiety; restlessness 6. Shocklike state (falling blood pressure, imperceptible pulse) 7. Cold, clammy, mottled cyanosis 8. Hyperthermia, delirium, coma	1. Intensive oxygen therapy (tracheotomy, if indicated) 2. Supportive measures
Bulbar-Encephalitic Group	
1. Hyperexcitability * 2. [illegible] * 3. [illegible] * 4. [illegible] * 5. Lethargy, somnolence and coma * 6. Convulsions (chiefly in children) *	Intensive oxygen therapy 1. Mask 2. Tent 3. Intranasal oxygen 4. By tracheotomy, if indicated
Bulbar-Cervical Cord Group	
1. Cranial nerve palsies (see group 1) 2. Symptoms of cardiorespiratory center involvement (see groups II and III) 3. Diaphragm and intercostal involvement	1. Early tracheotomy 2. Intensive oxygen therapy 3. Respirator

* These symptoms are usually caused by anoxia. If they persist after adequate oxygen therapy, then they are attributable to virus invasion of the cortex.

Of the 183 cases of bulbar poliomyelitis studied, there were 20 classified as belonging to this combined group, with 15 deaths. We feel that had the improved technics been available all through the epidemic some of these could have been saved.

DRUG THERAPY

The use of drugs in bulbar poliomyelitis is limited largely to prophylactic and supportive purposes. An objective evaluation of the value of these measures is not possible. There is a high percentage of pulmonary complications among the patients dying of bulbar poliomyelitis. In those patients dying during the first two weeks of their illness the common finding was hemorrhagic pulmonary congestion. Those dying after a longer illness showed more pulmonary sepsis. For this reason intramuscular injection of penicillin is useful as a prophylactic measure. In addition penicillin may be nebulized into the tracheotomy tube at regular intervals.

Whole blood transfusions, plasma and stimulants are given when indicated. It is felt that excessive intravenous administration of fluids is to be avoided when possible because of the danger of pulmonary edema.

Early in the course of the epidemic sedative drugs were used for the control of restlessness, anxiety and apprehension. However, 1 patient with bulbar poliomyelitis experienced marked respiratory depression one hour after a small dose of a sedative drug. It is felt that the damaged respiratory center is unable to tolerate depressants. For this reason sedatives should be used with extreme caution in all patients with bulbar poliomyelitis. Nursing care and acetylsalicylic acid are usually sufficient to keep most of the patients reasonably comfortable.

NUTRITION

Patients with moderately severe or severe bulbar poliomyelitis universally lose weight because of their febrile illness and their inability to swallow. During the first few days it is often found helpful to use fluids parenterally. Intravenous administration of fluids should be avoided when possible because of the danger of pulmonary edema. As soon as the patient's condition permits, feeding is instituted by nasal tube. This is continued until the patient is taking adequate amounts by mouth. The ability of the patient to swallow may be tested from time to time beginning with fluids and progressing to soft and then solid food. When swallowing is reasonably well established, the tracheotomy tube is stoppered to test the patient's airway. As soon as the patient can tolerate closure of the tube for twenty-four hours the tracheotomy tube is removed and the stoma permitted to close

SUMMARY AND CONCLUSIONS

During the 1946 epidemic of poliomyelitis, 183 patients with bulbar involvement were admitted to the University of Minnesota Hospitals. Studies on this large group of patients revealed that bulbar poliomyelitis was not a single homogeneous entity but could be divided into four groups of symptom complexes, each pointing toward involvement of a specific region of the nervous system and requiring varying treatment procedures. The suggested therapies, correlated with the symptoms generally seen, can be tabulated for each of the groups of bulbar poliomyelitis.

al Notes, Suggestions and New Instruments

MADURAMYCOSIS OF TIBIA IN A NATIVE AMERICAN

JACOB KULOWSKI, M D.
St. Joseph, Mo.
and
SIDNEY STOVALL, M D
San Antonio, Texas

Maduramycosis has been considered practically synonymous with so-called Madura foot, a term coined by the natives of India in the vicinity of Madura, one of the districts in which the disease is endemic. In Bocarro's (1893) series[1] of 100 cases, 93 involved the foot, 3 the hand and 2 the leg and trunk, respectively. Fungous infections are widely distributed throughout tropical and subtropical zones. Maduramycosis is occasionally seen in Africa, Europe, South America, Mexico and the United States, chiefly in Texas. However, of the 38 cases which have been reported in this country, only 11 (Downing and Conant,[2] [1945]) can be classified as maduramycosis as proved by culture of the organism. Our case belongs in the latter category.

REPORT OF CASE

A. T., a boy aged 8 years, was born and reared in Placitas, N. Mex., and had never been out of his native state. He was admitted to the Carrie Tingley Hospital,[3] Hot Springs, N. Mex., on Oct. 8, 1946, one month after onset of a circumscribed swelling of the left leg. Prior to onset there had been no prodromal signs and symptoms or related trauma, and no systemic reaction was noted later. He had always been in good health, and the family history was noncontributory. His only complaint had been slight tenderness to firm pressure and accidental bumping of the affected region. Examination revealed a hard moderate swelling over the midanteromedial aspect of the left leg, about 2 inches (5 cm.) in diameter, which did not interfere with the gait. The overlying skin was normal, and firm pressure elicited mild tenderness.

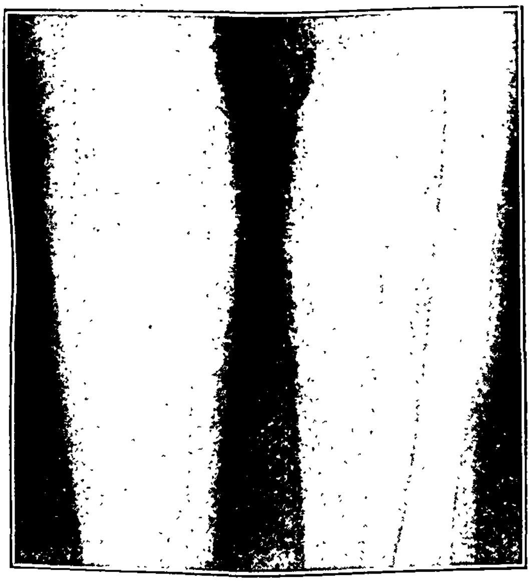

Fig. 1.—Roentgenologic appearance of the left tibial lesion (maduramycosis) one month after onset of swelling.

Roentgen examination of the left tibia (fig. 1) revealed a cystic area of destruction about 1 inch (2.5 cm.) in diameter in the cortex and adjacent medulla. The former was thickened in a fusiform manner and was perforated in front except for an intact line of periosteum. The enlargement caused a forward bulging of the bone anteriorly, which accounted for the swelling noted on physical examination. There was no abnormal soft tissue shadow in the vicinity of the cortical perforation and no periosteal reaction either locally or at a distance. The margins of the cyst were definitely limited, especially posteriorly, by a thin wall of increased density.

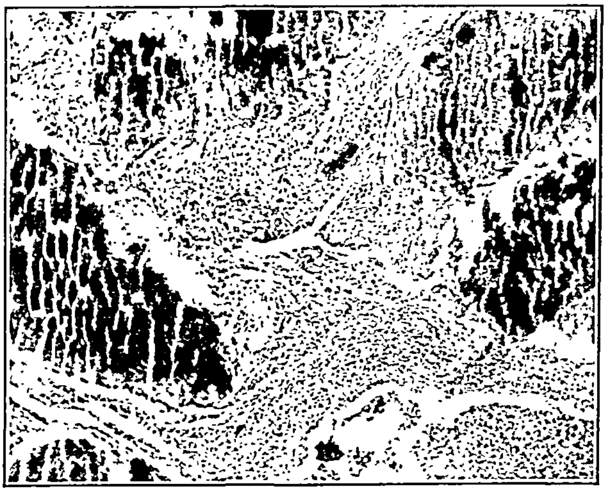

Fig. 2.—Photomicrograph (reduced from a magnification of × 95) of the soft granulomatous tissue removed at operation (maduramycosis); showing the heavy masses of coarse mycelial filaments.

The red blood cell count was 4,740,000 and the white blood cell count 8,200, with 52 per cent polymorphonuclear leukocytes, 43 per cent small lymphocytes, 1 per cent monocytes and 4 per cent eosinophils. The Kahn test of the blood and urinalysis were negative. Roentgen examination of the chest revealed no abnormalities.

A variety of conditions were considered in the differential diagnosis, which narrowed down to some unusual form of infection or possibly tumor formation. The absence of soft tissue and periosteal reaction in the face of the cortical perforation, the relatively short duration and the mild nature of the subjective symptoms, together with the reactive zone about the cystic area of destruction and its superficial resemblance to a Brodie abscess favored the diagnosis of an inflammatory lesion. Pathologic examination of the tissues was necessary to decide the issue.

On Oct. 16, 1946, with the patient under general anesthesia, the focus was subjected to exploration and excision. The soft tissues were normal. The periosteum was grayish, translucent and fluctuant. On incision, an unfamiliar black to grayish black caviar-like material exuded. The periosteum was excised, and a smooth ebonated cavity, about ¾ of an inch (1.9 cm.) in diameter and depth was entered in the tibia, in which the *remaining granular substance was evident and carefully wiped* out. The affected area was saucerized and swabbed out with iodine and alcohol. A small iodoform wick, loose closure with interrupted dermal suture, dressing and a posterior plaster splint completed the procedure. There was no local or general systemic reaction after operative intervention.

In the absence of a resident pathologist, the tissues removed at operation were sent routinely to Dr. Ashworth of Dallas, Texas. His pathologic report was as follows: "Grossly the material consisted of (1) fragments of bone with attached fibrous tissue and a thick creamy greenish yellow material weighing approximately 5 Gm. and (2) fragments of a soft friable black with intermingled grayish white tissue weighing approximately 0.5 Gm.

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[1] Bocarro, J. E.: Mycetoma, Indian M. Rec. **5:** 1, 74, 106, 148 and 214, 1893.

[2] Downing, J. G., and Conant, N. F.: Medical Progress: Mycotic Infections, New England J. Med. **233:** 153 (Aug. 2); 181 (Aug. 9.) 1945.

[3] At that time Dr. Kulowski was chief surgeon and Dr. Stovall senior resident of the Carrie Tingley Hospital.

"Microscopic examination of sections of soft tissue revealed a decided inflammatory reaction with considerable formation of granulation tissue. A few small spicules of bone were embedded in the granulation tissue. The granulation tissue was cellular, being infiltrated with numerous inflammatory cells. Multinucleated giant cells were also present in moderate numbers. Most of the inflammatory cells were lymphocytes and macrophages. There were a few areas in which large numbers of mononuclear wandering cells were present containing abundant lipoid material. These cells were similar to foam cells. Embedded in the granulation tissue there were several large bodies which had a reddish brown-staining appearance.

"These bodies were clumped together, forming a mass about 2 mm. in size. Examination of this tissue with a high power lens showed it to be composed of numerous coarse myceliums which had numerous small round and oval bodies, chlamydospores (fig. 2). Also, a small colony of similar appearance had a perfect radial arrangement of coarse eosinophilic clubs around the border. Around these colonies an encapsulation type of reaction, with giant cells, macrophages and slight suppuration, was encountered. The pathologic diagnosis was maduramycosis of the tibia."

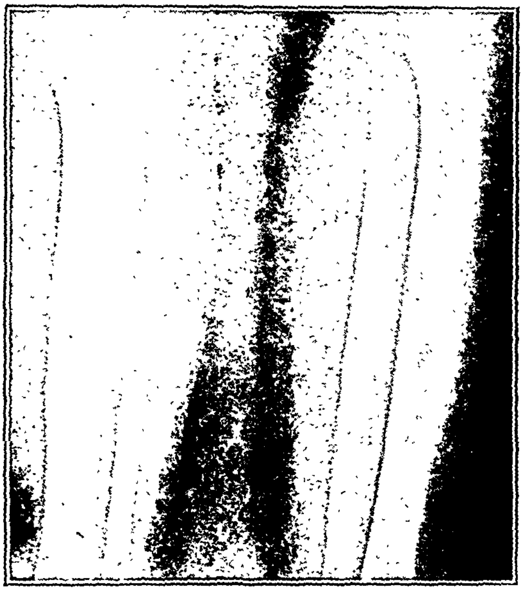

Fig. 3.—Roentgenologic appearance of the left tibial focus about six weeks after operative excision.

Since it was highly desirable, after receiving Dr. Ashworth's report, to obtain cultural confirmation, some of the material which had been removed at operation and which had been stored in a test tube at room temperature, was grown on an ordinary laboratory medium (Virginia Stovall, M.D.) and then sent to Dr. J. A. Gammel, who is an authority on this subject, for a bacteriologic report. In his letter dated Jan. 16, 1947 Dr. Gammel stated in part: "I have made a preliminary study of the cultures in the hanging drop. There is no doubt that the organism is a Madurella. I am unable to determine the type, as this requires many months of study. It differs from the two organisms I studied before, but I would not say that the difference is great enough to justify establishment of a new species. . . . You could definitely call the process a madurellamycosis."

While waiting for the pathologic report a policy of watchful observation had been adopted. The patient's postoperative convalescence had been uneventful. The iodoform wick was removed several days after the operation, and his wound healed by primary intention in two weeks. Nevertheless, because of the unusual nature of his lesion, on Oct. 29, 1946 (thirteen days after operation) penicillin 15,000 units was administered intramuscularly and continued every three hours through Nov. 7, 1946. In addition ultraviolet radiation was given locally for a brief period. He was discharged from the hospital on Nov. 9, 1946, walking in a plaster cylinder. This was removed about six weeks later, and guarded weight-bearing was advised. At that time the wound had remained perfectly healed; he had no complaints, and the general state of his health was excellent. A roentgenogram taken then (fig. 3) appeared to show slight evidence of healing but did not differ otherwise from the original. Since it is generally agreed that the disease does not tend to recur in remote parts of the body and that it seldom causes death except by cachexia or secondary infection, this patient's chances for permanent recovery seem favorable.

COMMENT

According to Scheube [4] (Clegg and Hobdy,[5] 1916) Kaempfer [6] (1712) was the first European physician to mention Madura foot. However, priority is given to Gill [7] (1842) of Madura, who called attention to the disease in a dispensary report. Colebrook [8] (1846), from the same dispensary, described what is now known as Madura foot. This disease is clinically characterized by: utter chronicity and destructiveness, enlargement and deformity, abscess and sinus formation, gradual and complete disorganization of the bones of the foot, the presence of grains, or granules, in the diseased tissues and exudates, usual absence of pain, absence of systemic reaction except in the presence of secondary infection (notwithstanding the deep infiltrative nature of the lesion) and absence of tendency toward spontaneous resolution. Carter [9] has stated that it begins as (1) a papule which becomes livid or mottled, (2) a nodule which is deep seated and fixed, (3) a vesicle surmounting a swollen, hard area or (4) an abscess which on rupture is found to be a fistula. The big toe is often affected first. The disease may then spread proximally only to the ankle and stop there for a short time; it then spreads to the knee and eventually may reach even the thigh. A case of recurrence has been observed in an amputation scar (Boyce and Surveyor,[10] 1894).

The incubation period of Madura foot varies from several days to weeks or even as long as three months. The extent of the destruction in our case would indicate that it was of more than one month's duration. The mode of transmission of the disease has not yet been determined. It is considered that evidence justifies the view of an external injury by an infected agent, such as coral or thorns. In Bocarro's series [1] 91 per cent of the patients were farmers and the remainder spent most of their time in the open. In 17 instances he noted evidence of a prick of an acacia thorn; in many of these cases he recovered the thorn itself. In our case the location of the lesion in the vicinity of the nutrient vessel, its roentgenologic appearance, the known coarseness of the myceliums of maduramycosis and the absence of trauma suggest a thromboembolic origin of the lesion. Thus the primary focus remains obscure.

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[4] Scheube, cited by Clegg and Hobdy.[5]

[5] Clegg, M. T., and Hobdy, W. C.: A Case of Mycetoma in Hawaii: Its Etiology, Am. J. Trop. Dis. **3**: 534-554, 1915-1916.

[6] Kaempfer, E.: Pericál, i. e., hypersarcosis ulcerosa pedum: Sive pedarthrocaces, morbus malabaris vernaculus, in Amoenitatum exoticarium, Lemgovical, H. W. Meyer, 1712, pp. 561-564.

[7] Gill, 1842, cited by Chalmers, A. J., and Archibald, R. G.: A Sudanese Maduromycosis, Ann. Trop. Med. **10**: 169 (Sept. 30) 1916.

[8] Colebrook, 1846, cited by Chalmers, A. J., and Archibald, R. G.: A Sudanese Maduromycosis, Ann. Trop. Med. **10**: 169 (Sept. 30) 1916.

[9] Carter, H. V.: On a New and Striking Form of Fungus Disease, Principally Affecting the Foot, and Prevailing Endemically in Many Parts of India, Tr. M. & Phys. Soc. Bombay (1860) **6**: 104-142, 1861; On Mycetoma or the Fungus-Disease of India, Including Notes of Recent Cases and New Observations on the Structure, etc., of the Entophytic Growth, ibid. (1861) **7**: 206-221, 1862; Note on Mycetoma, the Fungus-Disease of India, ibid. (1862) **7**: 26-28, 1863 [appendix]; On Mycetoma, Brit. & For. M.-Chir. Rev. **32**: 198-203. 1863; Memoranda Accompanying a Specimen of Mycetoma, Tr. Path. Soc. London **15**: 251-253, 1863-1864; Brief Notes of Two Cases of Mycetoma, or the Fungus Disease of India, with Sketch, Tr. M. & Phys. Soc. Bombay **9**: xlvii-xlix, 1869; Parasitic Fungus of Mycetoma, Tr. Path. Soc. London **24**: 260-263, 1872-1873; The Etiology of Madura-Foot, Indian M. Gaz. **9**: 220, 1874; On the Nature of Mycetoma, or the Fungus Disease of India, Lancet **2**: 44 and 113, 1874.

[10] Boyce, R., and Surveyor, N. F.: The Fungus-Foot Disease of India, Brit. M. J. **2**: 633, 1894.

The roentgenologic changes observed in Madura foot are extremely variable and, according to reports in the literature, are the result of direct infective destruction or reaction at a distance. Semon[11] (1915) found no evidence of skeletal damage after two and one-half months, although there was little doubt of bony involvement in his case. Carrion and Knott[12] (1944) found destruction, ankylosis and evidence of new bone formation in all the bones of the foot and only slight involvement of the ankle joint; but there was periosteal thickening almost throughout the entire length of both the tibia and the fibula. Shaw and MacGregor[13] (1935) noted periostitis of the fibula and chronic osteomyelitis of the tibia and tarsus, with obliteration of the articular spaces of the foot and ankle. Tribedi and Mukherjee[14] (1939) in 3 cases in persons of oriental origin described a fairly extensive patchy absorption of the tarsal bones and considerable periostitis. Likewise Gellman and Gammel[15] (1933) noted pronounced deformity of the foot with collapse of the bony elements. There was also considerable destruction of bone with evidence of bone formation in the nature of productive periostitis of the lower two-thirds of the shafts of the tibia and fibula along with fusion of the tarsus and metatarsus.

By reason of these bony changes alone the differential diagnosis involves the consideration of certain perforating ulcers of the foot: leprosy, syphilis, chromoblastomycosis and the like, mossy foot, osteomyelitis, tuberculosis and cancer. Maduramycosis should be suspected in all chronic granulomatous lesions which have not been otherwise identified. The diagnosis rests with the bacteriologic differentiation.

Van Dyke Carter's researches[9] (1860 to 1874) resulted in the recognition of the fungous character of this group of diseases. He coined the term mycetomas (fungous tumors) for the entire related group. Vincent[16] (1894) cultivated a streptothrix in a case of this variety and named it S. Madurae. In 1916 Chalmers and Archibald[17] defined mycetoma as a group name embracing the subgroup actinomycosis and maduramycosis. In 1927 Gammel[18] published an excellent review of the subject and further refined the bacteriologic aspects of this problem. He compiled a long list of etiologic fungi which were classed under nine genera. The morphologic differentiation of the mycetomas may be made on direct microscopic examination of the grains on the basis of the appearance of the mycelium and the presence or absence of chlamydospores.

All the various molds known to be pathogenic for man have one common feature; in defense against unfavorable conditions in the host or in culture they are able to form granules, or grains of various sizes, shapes and colors. These represent a colony of the infecting fungus. The word grain has become as specific as the term tubercle. It should be remembered that grains of the same color may represent entirely different specific agents in different cases. The actinomycotic mycetomas are recognized by the fine filaments, which are seldom measuring more than 1 micron in width; these mycetomas are hyaline, have a poorly defined cell membrane, are apparently nonsegmented and do not produce chlamydospores. But the maduramycotic molds contain coarse, clearly septate, branching filaments with well defined cell membranes, and they usually form chlamydospores. The ultimate identification must rest with the more refined and prolonged cultural studies performed by competent workers.

The gross and microscopic pathologic observations are fairly constant, regardless of the type of infecting fungus, except for minor details (Thompson,[19] 1928). There are a number of reports describing amputation specimens. Jones[20] (1931) could cut his specimen with a knife, the whole foot offering the consistency and resistance to cutting of cartilage. However, MacGregor[13] (1935) observed no definite extension of the disease into the bones of the foot but noted that all the joints were fused solidly. Crowell[21] (1915) found in several instances that the bones were soft and spongy below the astragalus, the marrow spaces were filled with a gelatinous material, with irregularity in bony outline or frank pus and a similar involvement of the synovial spaces.

The characteristic pathologic feature of mycetoma is essentially that of an infectious granulomatous lesion, including slowly progressive local necrosis and abscess formation, intermittent discharge through fistulous tracts of peculiar fluid and replacement of the normal tissues by granulation and fibrous tissue. The reaction is restricted to round cell infiltration, in many cases the formation of giant cells, in some the appearance of eosinophils and in all instances the production of granulation tissue and extensive scarring. Secondary infection alters the course of the local disease. A typical microsection through an abscess cavity or fistulous tract shows the grain, composed of mycelial elements, pigments and débris, suspended in fluid which fills the abscess or fistula. Suspended in the fluid also are polynuclear leukocytes and cellular débris. A zone of tissue composed of connective tissue fibrils, vascular loops and small round cells constitute the lining of the cavity or tract. External to this is a more or less distinct intermediate zone of dense connective tissue, sometimes containing eosinophils.

TREATMENT

The earliest writers on the subject of treatment agreed that excision in the early stages or amputation for the more chronic foci of Madura foot was the only treatment which gave any assurance that the disease would be controlled. The sulfonamide drugs and the antibiotics should offer some promise in the future, at least from the point of view of preventing and/or controlling concurrent secondary infection. Dixon[22] (1941) reported a case in which he treated the lesion with sulfonamide compounds. His patient remained well for eight months afterward, although her lesion had been present for fifteen years prior to sulfonamide therapy. Downing and Conant[23] (1944) also have expressed the belief that penicillin may be effective and that iodide preparations may be useful coadjuvants in the treatment, irrespective of the other therapeutic agents employed.

CONCLUSIONS

1. An unusual skeletal form of proved maduramycosis in a native American has been reported.

2. The diagnosis of similar closed lesions must rest with adequate laboratory examination of material removed surgically.

3. Open lesions always present the characteristic grains from which the diagnosis and morphologic differentiation of the mycetomas may be made on microscopic examination.

4. Early lesions respond to excision; secondary infection must be avoided.

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[11] Semon, H. C.: Mycetoma Pedis, Brit. J. Dermat. **22:** 299-303, 1915.

[12] Carrion, A. L., and Knott, J.: Mycetoma by Monosporium Apiosperum in St. Croix, Virgin Islands, Puerto Rico, J. Pub. Health & Trop. Med. **20:** 84-99 (Sept.) 1944.

[13] Shaw, R. M., and MacGregor, J. W.: Maduromycosis, with Report of a Case Due to Monosporium Apiospermum, Canad. M. A. J. **33:** 23-28 (July) 1935.

[14] Tribedi, B. P., and Mukherjee, B. N.: Actinomycotic and Mycotic Lesions, with Special Reference to "Madura Foot," Brit. J. Surg. **27:** 256-265 (Oct.) 1939.

[15] Gellman, M., and Gammel, J. A.: Madura Foot: Third Case of Monosporosis in a Native American, Arch. Surg. **26:** 295-307 (Feb.) 1933.

[16] Vincent, H.: Étude sur le parasite du "pied de Madura," Ann Inst. Pasteur **8:** 129-151, 1894.

[17] Chalmers, A. J., and Archibald, R. G.: The Classification of the Mycetomas, J. Trop. Med. **21:** 121-123, 1918.

[18] Gammel, J. A.: Etiology of Maduromycosis, with Mycologic Report on Two New Species Observed in the United States, Arch. Dermat. & Syph. **15:** 241-284 (March) 1927; correction, ibid. **15:** 477 (April) 1927.

[19] Thompson, H. L.: Present Status of Mycetoma, Arch. Surg. **16:** 774-788 (March) 1928.

[20] Jones, J. W., and Alden, H. S.: Maduromycotic Mycetoma (Madura Foot): Report of Case Occurring in an American Negro, J. A. M. A. **96:** 256-260 (Jan. 24) 1931.

[21] Crowell, B. C.: Mycetoma, Department of Pathology and Bacteriology, University of the Philippines, and the Biological Laboratory, Bureau of Science, Manila, P. I., 1915.

[22] Dixon, J. M.: Sulfanilamide Therapy in Madura Foot, Virginia M. Monthly **68:** 281-282 (May) 1941.

[23] Downing, J. G., and Conant, N. F.: Medical Progress: Mycotic Infections. New England J. Med. **233:** 153 (Aug. 2) 1945; 191 (Aug. 9) 1945.

5. The use of sulfonamide and antibiotic therapy is to be tried both prophylactically and curatively.

6. Careful clinical scrutiny of related lesions will reveal an occasional instance of these unusual infections even in native Americans.

NAIL IN DUODENUM REMOVED BY MAGNET

MURDOCK EQUEN, M.D.
ROBERT GILLIAM, M.D.
and
MERRILL LINEBACK, M.D.
Atlanta, Ga.

Once a swallowed metallic object has passed the pylorus it has been believed that the attending physician had his choice between allowing nature to take its course and calling in a general surgeon. Often of course the foreign body does pass uneventfully through the gastrointestinal tract, but if it has a point or a sharp or ragged edge there is always danger of perforation of the intestine, or, if the object is unusually long, it is always questionable whether it can pass through the fixed angulations of the duodenum. Surgical removal entails many hazards: Once the abdominal cavity of a small child is opened, it is difficult to locate a nail in the thick-walled retroperitoneal duodenum, to incise it and to suture it together; the operation carries a relatively high mortality.

Our experience with the magnet, which has so greatly simplified the removal of safety pins from the esophagus and the removal of any magnetic foreign body from the stomach, caused us to hope that the magnet might enable us to withdraw from above through natural channels ferrous objects from the duodenum. In hope of such an opportunity we had had prepared a new model of the magnet, 0.75 cm. in diameter, 3.75 cm. in length, slightly curved to facilitate its getting around curves, with a groove around one end to secure a loop of strong waxed thread.

So far as we know, no foreign body in the duodenum had ever been removed except by a formidable surgical operation prior to May 7, 1947.

REPORT OF CASE

About May 1, 1947, a boy of 4½ years was "trying to build a chicken coop." In the course of his play he managed to swallow a six penny nail. An hour later the presence of the nail in the stomach was demonstrated roentgenographically. His physician thought that the nail would pass through the intestinal tract. Two days later the nail was seen in the duodenum, point up. Daily roentgen examinations for four days showed that the nail made no progress, so on May 6 operation was planned for the following morning.

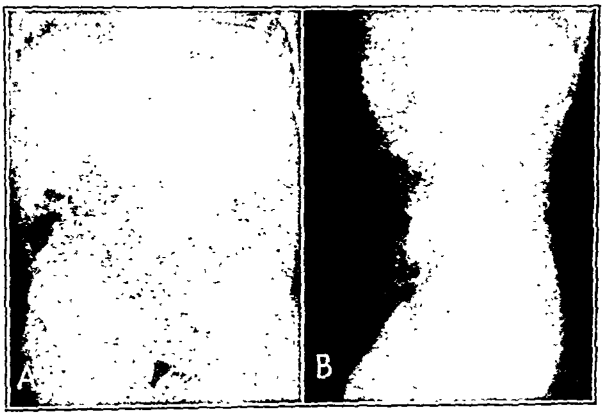


Fig. 1.—*A*, posteroanterior view shows the nail apparently in the second portion of the duodenum. *B*, the visualization of the stomach in the lateral view makes it virtually certain that the nail is in the second portion of the duodenum.

That evening the child's parents were talking with some former patients of ours, who suggested that perhaps the nail could be removed by means of the magnet. Since such a procedure seemed to them much less hazardous than the proposed operation, the next morning they brought him to Atlanta.

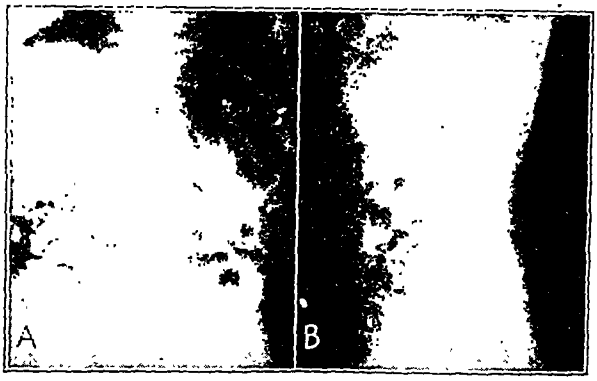


Fig. 2.—*A*, this roentgenogram taken an hour after the magnet was swallowed shows it entering the pylorus, which still contains a little of the barium. The arrow points to the groove in the magnet by which the string was attached. *B*, this lateral view shows the magnet coming down on the nail in good contact with it.

Strangely enough, the boy had had no symptoms. A flat roentgenogram of the abdomen showed the 1½ inch (3.8 cm.) nail to the right of the vertebral column, pointing medially. After he had swallowed barium (fig. 1) we felt sure that the nail was in the second portion of the duodenum, and agreed with his former physician that it could not be expected to pass further on spontaneously.

The most difficult part of the procedure was to get the little boy to swallow the new model of the magnet with waxed string attached. By 11:30 a. m. he had managed to swallow it with a thick "chocolate malted" and a caffein-containing soft drink as a chaser. An hour later a roentgenogram (fig. 2 *A*) showed the magnet in the pyloric antrum. After this the child took a nap.

Shortly before 6 p. m. he exclaimed suddenly, "Oh mama, I felt something click! I'm going to get well now!" He then complained of dull pain in the right epigastrium. A lateral view showed the magnet in contact with the nail (fig. 2 *B*).

The child was anesthetized with ether to secure perfect relaxation, and the string was tautened. Under fluoroscopic guidance the magnet and nail were slowly pulled back into the stomach. Once they were in the stomach, which was already dilated with air which he had swallowed in swallowing the magnet, we were sure of success, and magnet and nail were rapidly withdrawn. The operating time was less than two minutes.

The boy vomited a little clear green fluid a few minutes after his return to the room, and twice more in the next few hours a small amount of clear colorless fluid. The next day he was put on a liquid diet and seemed none the worse for his experience. After a day of soft diet he was sent home well.

SUMMARY

A six penny finishing nail was swallowed by a little boy, and remained in the second portion of the duodenum five or six days. The boy was persuaded to swallow a new model of the magnet attached to a string; about four and one-half hours later he felt the magnet come in contact with the nail. Under fluoroscopic guidance, magnet and nail were withdrawn in less than two minutes.

This is the first reported case in which a foreign body in the duodenum has been removed from above through the natural channels.

From the Ponce de Leon Ear, Nose & Throat Infirmary.

Read before the Section on Laryngology, Otology and Rhinology at the Ninety-Sixth Annual Meeting of the American Medical Association, Atlantic City, N. J., June 11, 1947.

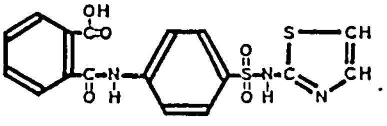
Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

Austin Smith, M.D., *Secretary.*

PHTHALYLSULFATHIAZOLE.—Sulfathialidine-Sharp & Dohme.—2(N-phthalyl-sulfanilamido) thiazole.—$C_{17}H_{13}O_5N_3S_2$.—M. W. 403.42.



Phthalylsulfathiazole may be prepared by the condensation of sulfathiazole with phthalic anhydrid.

Actions and Uses.—Phthalylsulfathiazole is a derivative of sulfathiazole closely related to succinylsulfathiazole used for the oral treatment of infection in the intestinal tract. Unlike the latter, however, it is not recommended for acute bacillary dysentery or elimination of the carrier state. It is used in the management of inflammatory disease of the intestinal tract and for the reduction of coliform bacteria prior to operative procedures involving surgery of the small intestine or colon. There is clinical evidence to warrant its use as an adjunct to other measures in the control of both acute and chronic ulcerative [illegible]tis.

[illegible] is absorbed to the extent of only about 5 per cent and rarely reaches a concentration in the blood of more than 1.5 mg. per hundred cubic centimeters with doses usually prescribed. This proportion is excreted by the kidneys, mostly conjugated, which forms soluble salts in acid urine. The possibility of crystalluria is therefore remote. No toxic manifestations have been observed with therapeutic doses except where sensitivity to sulfonamides was previously acquired.

Dosage.—Orally, in tablet form, from 0.05 to 0.1 Gm. per kilogram of body weight daily. This is given in equally divided doses at intervals of four, six or eight hours, depending on the total dose to be administered. The average daily adult dose is provided by eight to twelve 0.5 Gm. tablets and should not exceed 8 Gm. Smaller doses, as indicated by response, may be continued for initial periods up to eight weeks or even longer for the management of ulcerative colitis. As a preliminary adjunct to intestinal surgery, an initial dose of 0.125 Gm. per kilogram followed by the same amount daily in divided doses given at equal intervals, comprising three, four or six doses per day, is given for a period of three to five days prior to operation.

Tests and Standards.—

Phthalylsulfathiazole occurs as an odorless, white or faintly yellowish white, crystalline powder possessing a slightly bitter taste. It may slowly darken on long exposure to light. It is slightly soluble in alcohol, very slightly soluble in ether, practically insoluble in chloroform and in water; it is ready soluble in sodium or potassium hydroxide solution, in 10 per cent ammonia solution and in concentrated hydrochloric acid.

Phthalylsulfathiazole darkens and effervesces at from 244 to 250 C. and melts at from 272 to 277 C., with decomposition, when the melting point bath is preheated to about 220 to 225 C. before immersion of the sample tube.

Place about 0.25 Gm. of phthalylsulfathiazole in a test tube and add 5 cc. of 10 per cent sodium bicarbonate [illegible] dissolves on warming and carbon dioxide i[illegible]: *from sulfanilamide, sulfathiazole, sulfapyridine,* [illegible] *ulfadiazine).*

Add 10 cc. of concentrated hydrochloric acid to about 0.5 Gm. of phthalylsulfathiazole contained in a small beaker, cover with a watch glass and heat on a steam bath until the solid has nearly all dissolved. Cool the solution, transfer to a separatory funnel and extract with two 25 cc. portions of ether, combine the extracts and evaporate to dryness: the melting point of the residue is not less than 195 C.

Dry an accurately weighed sample of phthalylsulfathiazole at 100 C. for twenty-four hours: the loss in weight does not exceed 2.0 per cent.

Ignite about 1.0 Gm. of phthalylsulfathiazole, accurately weighed. Cool, add sufficient sulfuric acid to moisten the charred mass and ignite to constant weight: the ash is not more than 0.1 per cent.

Digest 2.0 Gm. of phthalylsulfathiazole with 100 cc. of distilled water at room temperature for thirty minutes; filter. (1) To 25 cc. of filtrate add two drops of phenolphthalein solution and titrate with tenth-normal sodium hydroxide solution: not more than 1 cc. of the sodium hydroxide solution is required to produce a pink color. (2) To another 25 cc. of the filtrate add 1 cc. of nitric acid and 1 cc. of silver nitrate solution: mix well and allow to stand for five minutes protected from direct sunlight: the turbidity does not exceed that produced in a control test made with 0.1 cc. of fiftieth-normal hydrochloric acid. (3) To another 25 cc. of the filtrate add 1 cc. of diluted hydrochloric acid and 1 cc. of barium chloride solution; mix well and allow to stand for ten minutes: the turbidity does not exceed that produced in a control test made with 0.2 cc. of fiftieth-normal sulfuric acid.

Dissolve 0.5 Gm. of phthalylsulfathiazole in a mixture of 5 cc. of one-normal sodium hydroxide and 20 cc. of distilled water: the solution is clear and not more than pale yellow; add five drops of freshly prepared 10 per cent sodium sulfide solution: the darkening produced does not exceed that developed in a control test to which has been added 0.01 mg. of lead.

Accurately weigh about 1.0 Gm. of phthalylsulfathiazole, previously dried at 100 C., for four hours. Transfer the weighed sample to a 250 cc. beaker and add 20 cc. of hydrochloric acid. Cover with a watch glass and heat on a water bath for two hours. Filter the mixture into a separatory funnel. Wash the beaker and the filter paper with several portions of 10 per cent hydrochloric acid, collecting the washings in the separatory funnel. Extract the cool filtrate with five 50 cc. portions of ether, discarding the ether extracts. Heat the aqueous solution on a water bath until all of the ether is driven off. Add 5 cc. of concentrated hydrochloric acid, cool to 15 C. and slowly titrate with one-tenth molar sodium nitrite, stirring vigorously, until a blue color is produced immediately when a glass rod dipped into the titrated solution is streaked on a smear of starch-iodide paste. When the titration is complete, the end point is reproducible after the mixture has been allowed to stand for one minute. Each cubic centimeter of one-tenth molar sodium nitrite is equivalent to 0.04034 Gm. of phthalylsulfathiazole: the amount of phthalylsulfathiazole found corresponds to not less than 96 per cent nor more than 102 per cent.

Sharp & Dohme, Inc., Philadelphia

Tablets Sulfathalidine: 0.5 Gm.

U. S. Patents 2,324,013 and 2,324,015. U. S. trademark, registered.

ETHINYL ESTRADIOL (See New and Nonofficial Remedies, 1947, p. 352).

The following dosage form has been accepted:

Schering Corporation, Bloomfield, N. J.

Tablets Estinyl: 0.02 mg. and 0.05 mg.

AMINOPHYLLINE (See New and Nonofficial Remedies, 1947, p. 305).

The following dosage form has been accepted:

Ingram Laboratories, Inc., San Francisco

Ingraloids Aminophylline: Ampuls 0.243 Gm. in 2 cc. or 10 cc. and ampuls 0.486 Gm. in 2 cc., 10 cc. or 20 cc.

Council on Foods and Nutrition

ACCEPTED FOODS

The following products have been accepted as conforming to the Rules of the Council. James R. Wilson, M.D., *Secretary.*

Rochester Dairy Cooperative, Rochester, Minn.

Rochester Dairy Brand Powdered Whole Milk, Vitamin D Fortified, a powdered whole milk with vitamin D_3 added in the form of irradiated 7-dehydrocholesterol concentrate in amounts sufficient to produce a minimum of 400 U. S. P. units of vitamin D_3 per 4 ounces (124 Gm.) of whole milk powder.

Analysis (submitted by manufacturer).—Butterfat 28.00%, protein (N × 6.38) 26.20%, lactose 38.00%, minerals 5.80%, moisture 2.00%, 400 U. S. P. units of vitamin D_3 per reconstituted quart.

Calories.—5.10 per gram; 145.00 per ounce.

Golden State Company, San Francisco, Calif.

Golden State Brand Powdered Whole Milk, Vitamin D Fortified, a powdered whole milk with vitamin D added in the form of irradiated ergosterol dispersible concentrate in amounts sufficient to produce a minimum of 400 U. S. P. units of vitamin D per 4 ounces (124 Gm.) of whole milk powder.

Analysis (submitted by manufacturer).—Butterfat 28.00%, protein (N × 6.38) 26.00%, lactose 37.95%, minerals 5.80%, moisture 2.25%, 400 U. S. P. units per reconstituted quart.

Calories.—5.10 per gram; 145.00 per ounce.

Kraft Cheese Company, Chicago, Ill.

Kraft Brand Powdered Whole Milk, Vitamin D Fortified, a powdered whole milk with vitamin D added in the form of irradiated ergosterol dispersible concentrate in amounts sufficient to produce a minimum of 400 U. S. P. units of vitamin D per 4 ounces (124 Gm.) of whole milk powder.

Analysis (submitted by manufacturer).—Butterfat 28.00%, protein (N × 6.38) 26.00%, lactose 37.95%, minerals 5.80%, moisture 2.25%, 400 U. S. P. units per reconstituted quart.

Calories.—5.10 per gram; 145.00 per ounce.

THE JOURNAL OF THE
AMERICAN MEDICAL ASSOCIATION

535 North Dearborn Street - - Chicago 10, Ill.

Cable Address - - - - "Medic, Chicago"

Subscription price - - - - : Eight dollars per annum in advance

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SATURDAY, OCTOBER 18, 1947

IODINE AND TABLE SALT

Before modern processes for refining salt were developed, most table salt contained iodine, a natural contaminant. In regions where such salt was consumed colloid goiter was uncommon. Modern table salt is recrystallized by heating to high temperatures; any iodides contained are decomposed by these high temperatures and the iodine is lost. In the Kanawa River Valley in West Virginia salt obtained from local mines has a content of iodide representing roughly 80 parts of iodine for each million parts of salt. In the 1890s salt refined by modern methods replaced this natural product. The whiteness of the new salt together with its pouring qualities quickly overcame such competition as could be offered by the local product. Substitution of the whiter, better-pouring salt for the local product soon was followed by the appearance in this valley, apparently for the first time, of colloid goiter. The number of cases of goiter rapidly increased. In 1922, when a goiter survey was made, the prevalence of goiter proved to be as high as that in the Lake Superior region: around 60 per cent of adolescent girls had goiter.[1]

A long suspected role of iodine in the prevention of colloid goiter was established in 1916 by Marine and Kimball's[2] study of the effect of giving iodine to the children in the schools of Akron, Ohio. Development of goiter was prevented in these children. Not long afterward campaigns were undertaken to secure more adequate supplies of iodine for every one. Foods grown in goitrous regions and the water of such regions had long been shown to be poor in iodine. The addition of iodine to either foods or water offered difficulties. Finally, the iodization of table salt was selected as a satisfactory means to achieve the desired end. The campaign to popularize the use of iodized salt was instituted in the state of Michigan with results that were dramatic. Iodized salt was also used in Switzerland, where goiter was endemic; results there were encouraging. Soon thereafter, with the full cooperation of the manufacturers of salt, iodized salt was made available throughout the United States.

Lack of iodine is not the only cause of goiter. Several foods seem to be goitrogenic. Among them are the vegetables of the cabbage family and certain beans, notably soybeans. However, the effect of the goitrogens in food can be neutralized by iodine; the amount of iodine obtained by using table salt with an iodine content conforming to the standard established by the Food and Drug Administration will accomplish what is necessary. The amount of iodine is minute: 1 part of potassium iodide or suitable equivalent for each 10,000 parts of salt, representing 75 to 80 parts of iodine for each million parts of salt.

Those physicians whose experience reaches to the first two decades of this century recall the dramatic lowering of the incidence of goiter which closely followed the launching of the nationwide campaign to educate the public to make use of iodized salt. Colloid goiter, formerly so prevalent as to simulate an epidemic among adolescent girls, almost disappeared. In Chicago all the laboratory dogs were goitrous in those days; within a year or two goitrous dogs were seldom seen. The experience of the majority of the physicians active now does not extend back to that time. The public has lost interest, and use of iodized salt is said to be diminishing.

Must one wait for another goiter "epidemic" to provide the impetus for successful education of the public, or should the need for legislative action to prevent recurrence of the "epidemic" be recognized? Would universal use of salt containing iodine accomplish even more than has been accomplished up to now? Only half the table salt was iodized even at the peak of the educational campaign; although the incidence of goiter diminished greatly, goiter still continues to be prevalent. These considerations prompt the present effort to obtain federal legislation to require the presence in table salt of a satisfactory content of iodine. Although the Food and Drug Administration under the provisions of the Federal Food, Drug and Cosmetic Act of 1938 could and did establish a standard for so-called iodized salt, the law did not provide authority to interfere with the marketing of salt which was not iodized.[3] Bills (H. R. 2717 and H. R. 4211) to amend the Act to provide the necessary authority, were introduced in the last Congress. Under the latter bill table salt would be defined as a salt carrying not less than 75 and not more than 150 parts of iodine as iodide for each 1,000,000 parts of salt. The pro-

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1. Kimball, O. P.: Endemic Goiter and Public Health, Am. J. Pub. Health 28: 587 (May) 1938.
2. Marine, David and Kimball, O. P.: The Prevention of Simple Goiter, J. Lab. & Clin. Med. 3: 40 (Oct.) 1917.
3. Herrick, A. D.: Food Regulation and Compliance, New York, Revere Publishing Company, 1944, vol. 1, p. 524.

posed legislation had the support of almost every one acquainted with the health aspects of the goiter problem; it was endorsed not only by the Council on Foods and Nutrition and the Board of Trustees of the American Medical Association but also by the American Public Health Association, the Food and Nutrition Board of the National Research Council and the Association of State and Territorial Health Officers. The salt industry and a few physicians opposed, but none has offered evidence that salt which contains iodine in the small amounts proposed can be injurious. The opposition of the industry is not based on costs. The cost is minimal—so small, indeed, that for many years the market price of iodized salt has been the same as that of the uniodized product. The objections of physicians who oppose the legislation can be met by provisions which would permit the marketing of uniodized salt under some such designation as "Salt deficient in iodine."

The Council on Foods and Nutrition finds no reason to anticipate injurious effects of any kind from ingestion of iodine in the amounts obtainable from the continued use of salt iodized to the degree contemplated by the pending legislation. Occasional cases of adenomatous goiter occur, in which hyperthyroidism has developed after the medicinal use of iodine—so-called iod-Basedow—but doubt exists as to the separate entity of iod-Basedow and the part played by iodine in its production. Furthermore, in cases in which iodine has been suspected of contributing to the development of hyperthyroidism, the amount of iodine taken has been from fifty to one hundred and fifty times as much as would be obtainable from the use of table salt with no more than 160 parts of iodine for each million parts of salt. Occasional persons are hypersensitive to iodine and may react with acne to such minute amounts of iodine as are obtainable from iodized salt. However, a large experience indicates that the number of such hypersensitive persons must be very small. Some persons are sensitive to cottonseed oil, milk, eggs or other foods. They require special medical assistance, and for their special needs special foods are used. Nothing in the proposal to require the addition of iodine to table salt would interfere with the provision of uniodized salt for such special dietary purposes. Indeed, another section of the Food, Drug and Cosmetic Law (section 403J) permits the sale of foods for special dietary use when the label bears information regarding its dietary properties which will fully inform the purchaser as to its value for such use.

The proposed legislation failed in the last session of the Congress because of opposition, which it is hoped can be avoided in the future. A new bill will be introduced in the coming Congress. The members of the medical profession are urged to give this legislation their most vigorous support.

THE SITE OF INCIPIENT CLINICAL PULMONARY TUBERCULOSIS

According to the "old pathological theory" dating back as far as the postmortem findings of Morgagni in the seventeenth century, verified later by Bichat in the clinic and then by Laënnec in the nineteenth century, pulmonary tuberculosis begins in one or both apexes and spreads thence slowly in an apicocaudal direction. In the early part of the twentieth century Ghon introduced the conception of the primary pulmonary infection or complex (called the Ghon tubercle), which might be located anywhere in the lungs. In 1922, however, Assmann[1] showed that, in adults exposed to severe tuberculous infection, clinical disease most frequently began from a compact density lying infraclavicularly without a simultaneous lesion in the apex region itself.

At the congress in Wildbad in 1928, the so-called new theory was formulated, championed by Bruening, Redeker and Kayser-Petersen. The new theory maintained that pulmonary tuberculosis usually begins from an "early infiltrate" (Simon), which most often lies infraclavicularly. Accordingly, tuberculosis does not develop slowly and continuously but in leaps and bounds. No regulated connection exists between apical tuberculosis and the phthisis of the adult. The new theory, correct or not, became of great importance, since the first appearance of the "early infiltrate" is free from symptoms and most often cannot be diagnosed with the usual physical methods. Radiography increased in value, and early diagnosis became most important. Now it was impossible to wait until patients felt ill; the doctor had to go out among the apparently healthy population and seek out those who had tuberculosis.

The new theory developed mass investigation, using first the screening method and later the miniature radiologic examination. In 1938 Malmros and Hedvall[2] of Sweden reported the results of studies of many years using frequent radiographic examinations and followed from "the reversion from negative to positive tuberculin reaction right up to the appearance of incipient tuberculosis." Such careful follow-up studies proved that the disease did not start from the "early infiltrate" but from small spots, so-called initial foci, usually appearing first in the supraclavicular region or the first intercostal space or these two regions at the same time. These investigations encouraged the supporters of the old theory, especially the pathologists who had never accepted the new theory. Loeschke[3] emphasized that tuberculosis in adults always starts from small foci in the region about the apical bronchus. Kremer emphasized a disease of the apical bronchus in many cases unrecognizable in the x-ray film.

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[1] Assmann, H.: Klinische Roentgendiagnostik inneren Erkrankungen, ed. 2, Leipzig 1922, p. 256; Beitr. z. Klin. d. Tuberk. **60:** 527, 1925; Deutsche med. Wchnschr. **53:** 781, 1927; Klin. Wchnschr. **6:** 2128, 1927; Ergebn. d. ges. Wchnschr. Tuberk.-Forsch. **1:** 115, 1930.

[2] Malmros, H., and Hedvall, E.: Studien über die Entstehung und Entwicklung der Lungentuberculose, Tuberk, Bibl. **68:** 1, 1938.

[3] Loeschke, H.: Ueber Entwicklung, Vernarbung und Reaktivierung der Lungentuberkulose Erwachsener, Beitr. z. Klin. d. Tuberk. **68:** 251, 1928.

In further investigations reported in 1946 from the University Lung Clinic, Uppsala, Sweden, Hedvall[4] notes that tuberculosis in children is disappearing in Sweden and that primary tuberculosis in adults behaves in rather the same way as in children. Again he reiterates that pulmonary tuberculosis generally was found to have begun in the uppermost part of the lung and that the lesions have not shown any special preference for the immediate subclavicular region as the supporters of the new theory assert. The importance of this is to seek carefully these small foci, initial foci, otherwise many early cases of pulmonary tuberculosis will escape diagnosis.

Current Comment

PLANNING FOR THE CHRONICALLY ILL

Last week THE JOURNAL (p. 343) published a comprehensive statement on "Planning for the Chronically Ill" prepared jointly by four national organizations.[1] The statement analyzes the ever growing problem of chronic illness and makes recommendations. The problems created by chronic illness are not only medical problems but economic and social welfare problems as well. Each year chronic diseases cause almost a million deaths and the loss of almost a billion days of productive work. The average life span is much longer today than a few generations ago; as the average continues to increase, the number of persons chronically ill likewise will increase. In the year 1900 1 person in 25 was 65 years of age or older; it is estimated that by 1980 the ratio will be 1 in 10. Chronic diseases, however, kill young persons as well as the old. Perrott states that 16 per cent of all persons with known chronic diseases are under 25 years of age. From the point of view of prevalence, disability, invalidism and death, the most important chronic diseases are heart disease, arteriosclerosis, hypertension, nervous and mental diseases, arthritis, nephritis, tuberculosis, diabetes and asthma. Local governmental agencies, hospitals and physicians, as well, have been slow in recognizing and in planning to meet this great problem. The statement "Planning for the Chronically Ill" offers a guide for future legislation. The recommendations in the joint report include an intensified program for the prevention of chronic diseases and suggestions for the more constructive treatment of the medical, social and economic problems involved. The joint committee recommends a simultaneous attack on chronic illness by local, state and national organizations and government at the various levels. The statement has been approved by the House of Delegates of the American Medical Association, which authorized its members on the committee to proceed further to investigate and evaluate the problems of the chronically ill.

ANTIVIVISECTIONISM DECLARED CONTRARY TO PUBLIC INTEREST

The perpetuation of antivivisectionism depends on public subscriptions, contributions and bequests. When the money runs out, the salaried executive secretaries who promote the movement will lose interest and it will disappear. The periodic whipping-up of frenzy over alleged cruelties to animals which is staged regularly by the antivivisection organizations reflects this situation. Antivivisectionist officialdom has claimed that funds contributed to their organization should be exempt from taxation because they are given for the public benefit. In Britain the antivivisection societies made such a tax exemption claim on the ground that they were a charitable organization for the public benefit. This claim was denied by the Tax Commissioners, who were supported by the Courts. The antivivisectionists carried their appeal to Britain's highest court, the House of Lords. According to the New York *Times*,[1] the House of Lords has upheld four to one the contention of the tax authority that the antivivisection society was not an organization established for charitable purposes only. According to the New York *Times*:

> So far from being for the public benefit, the Law Lords decided, the object of the Anti-Vivisection Society was gravely injurious because, if achieved, it would be detrimental to medical science and research, and consequently to the public health.
>
> Lord Wright, delivering the majority judgment, said the society's only claim to be regarded as charitable must be the establishment of the fact that it was beneficial to the community. What it seemed to do, however, was to destroy a source of enormous blessing to mankind.
>
> He did not question that a high regard for animals was a good thing, but it must be regulated regard. Purposeless cruelty could not be forgiven, but it was impossible to apply the word "cruelty" to efforts of high minded scientists who devoted themselves to vivisection experiments for the purpose of alleviating human suffering.
>
> No one faced with the decision to choose between saving a man or an animal could hesitate to save the man.

The decision of the British House of Lords was logical. Even an extraordinary stretch of the imagination could not permit any reasoning person to believe antivivisectionism in the public interest or meriting consideration as a charitable activity. The only benefits accrued to any one arise from the salaries paid to the promoters of this antisocial movement.

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[4] Hedvall, Erik: Tuberculosis Incipiens: Further Studies of the Initial Stage of Chronic Pulmonary Tuberculosis, Acta med. Scandinav., Supp. 181 Stockholm, 1946.

[1] American Hospital Association, American Public Health Association, American Public Welfare Association and the American Medical Association.

[1] New York Times, July 22, 1947.

ORGANIZATION SECTION

Official Notes

HOTEL RESERVATIONS FOR CLEVELAND SESSION

On advertising pages 84 and 85 will be found information concerning hotel reservations and how to secure them for the Cleveland interim session, Jan. 5-8, 1948. Every member desiring to attend that session should immediately fill in the application form in The Journal and send it to Dr. David Chambers, Chairman, Subcommittee on Hotels, 511 Terminal Tower, Cleveland 13.

Information concerning hotel reservations for the annual session in Chicago in June of 1948 cannot be published until after the close of the Cleveland interim session. Those desiring to attend the Chicago session in June would find it advantageous to await the publication of this information concerning hotel reservations before writing for reservations.

Coming Medical Meetings

Conference of State Medical Society Secretaries and Editors, Chicago, A.M.A. Headquarters, Nov. 7-8. Dr. George F. Lull, 535 N. Dearborn St., Chicago 10, Secretary.

American Academy of Dermatology and Syphilology, Chicago, Palmer House, Dec. 7-11. Dr. Earl D. Osborne, 471 Delaware Ave., Buffalo, N. Y., Secretary.

American Academy of Pediatrics, Dallas, Texas, Dec. 8-11. Dr. Clifford G. Grulee, 636 Church St., Evanston, Ill., Secretary.

American Association of Railway Surgeons, Chicago, Nov. 23-25. Dr. Raymond B. Kepner, 547 West Jackson Boulevard, Chicago 6, Secretary.

American Otorhinologic Society for the Advancement of Plastic and Reconstructive Surgery, New York, Nov. 13. Dr Norman N. Smith, 291 Whitney Ave., New Haven 11, Conn., Secretary.

American Society for the Study of Arteriosclerosis, Chicago, Hotel Knickerbocker, Nov. 2-3. Dr. O. J. Pollak, Wilmington General Hospital, Wilmington 14, Delaware, Secretary.

American Society of Anesthesiologists, New York, Hotel New Yorker, Dec. 4-5. Dr. Curtiss B. Hickcox, 745 Fifth Ave., Room 1503, New York 22, Secretary.

American Society of Clinical Pathologists, Chicago, Drake Hotel, Oct. 28-30. Dr. A. S. Giordano, 531 N. Main St., South Bend, Ind., Secretary.

American Society of Tropical Medicine, Atlanta, Ga., Dec. 2-4. Dr. Norman H. Topping, National Institute of Health, Bethesda 14, Md., Secretary.

Association of American Medical Colleges, Sun Valley, Idaho, Oct. 27-29. Dr. Fred C. Zapffe, 5 S. Wabash Ave., Chicago, Secretary.

Association of Military Surgeons of the United States, Boston, Hotel Statler, Nov. 13-15. Col. James M. Phalen, Army Medical Museum, Washington 25, D. C., Secretary.

Central Society for Clinical Research, Chicago, Drake Hotel, Oct. 30-Nov. 1. Dr. Ford K. Hick, 25 E. Washington St., Chicago 2, Secretary.

Clinical Orthopaedic Society, Indianapolis, Oct 24-25. Dr. C. R. Rountree, 1200 N. Walker St., Oklahoma City, Secretary.

Indiana State Medical Association, French Lick, Oct. 28-30. Mr. Ray E. Smith, 23 E. Ohio St., Indianapolis 4, Executive Secretary.

New England Postgraduate Assembly, Boston, Copley-Plaza Hotel, Oct. 29-31. Dr. Leroy E. Parkins, 8 Fenway, Boston 15, Chairman.

New York State Association of Public Health Laboratories, Albany, Nov. 7. Miss M. B. Kirkbride, New Scotland Ave., Albany 1, Secretary.

Oklahoma City Clinical Society, Oklahoma City, Biltmore Hotel, Oct. 27-30. Dr. Elmer R. Musick, 512 Medical Arts Bldg., Oklahoma City, Director of Clinics.

Omaha Mid-West Clinical Society, Omaha, Oct. 27-31. Dr. John M. Thomas, 1031 Medical Arts Bldg., Omaha 2, Secretary and Director of Clinics.

Post Graduate Medical Assembly of South Texas, Houston, Texas, Coliseum, Dec. 1-3. Dr. E. Trowbridge Wolf, 229 Medical Arts Bldg., Houston, Texas, Secretary.

Puerto Rico, Medical Association of, San Juan, Dec. 10-14. Dr. Jeramfel Cordero, Box 3866, Santurce, Secretary.

Radiological Society of North America, Boston, Nov. 30-Dec. 5. Dr. Donald S. Childs, 607 Medical Arts Bldg., Syracuse 2, N. Y., Secretary.

Seaboard Medical Association of Virginia and North Carolina, Virginia Beach, Va., Dec. 2-5. Dr. Clarence Porter Jones, 3117 West Ave., Newport News, Va., Secretary.

Southern Medical Association, Baltimore, Nov. 24-27. Mr. C. P. Loranz, Empire Bldg., Birmingham 3, Ala., Secretary.

Southwestern Medical Association, Phoenix, Ariz., Hotel Westward Ho, Nov. 6-8. Dr. Louis W. Breck, 116 Mills St., El Paso, Texas, Secretary.

Western Surgical Association, Colorado Springs, Broadmoor Hotel, Dec. 4-6. Dr. Warren H. Cole, 1853 West Polk St., Chicago 12, Secretary.

Southern Surgical Association, Hollywood, Fla., Dec. 9-11. Dr. Alfred Blalock, Johns Hopkins Hospital, Baltimore 5, Secretary.

Washington Letter

(From a Special Correspondent)

Oct. 16, 1947.

A. M. A. President Cites Doctors' Responsibility in Human Relations

Dr. Edward L. Bortz, President, American Medical Association, told those at the Past Presidents' Dinner of the Medical Society of the District of Columbia that physicians must exercise statesmanship in combating antisocial and unhealthy human trends. Speaking at the conclusion of the society's three day eighteenth annual scientific assembly, he said: "The degenerative lesions of the body, cancer, tuberculosis, diabetes, rheumatism and the others, will eventually yield to the neverceasing search of medical investigators. If these are brought under control, unless there is a closer understanding of human relationships at the individual and also at the national and international levels, mankind will have gained an empty victory. Society needs to mobilize its forces today for the control of antisocial and unhealthy human trends, which have brought two catastrophes within the past quarter century." Dr. Bortz said that leadership toward this objective must come from the members of the medical profession. He advocated formation of a world medical association.

General Hawley Proposed as Head of Veterans Administration

Major Gen. Paul R. Hawley, medical director of the Veterans Administration and Army chief surgeon in the European theater during the war, is being "boomed" by backers of the agency's medical program to be named administrator when General Bradley takes over as Army Chief of Staff. General Hawley indicated this week that he would like to retire, but he said that he would stay on the job as long as he considered that he was essential to continuance of the medical program. He said that he does not want the VA directorship and believed that "a new administrator should pick his own medical director." Dr. Paul B. Magnuson of Chicago, one of his principal associates in reorganization of Veterans Administration medical practice, stated his confidence that Dr. Hawley would take the top post if Mr. Truman should ask him. Dr. Hawley is credited with developing the agency's vast medical and hospital services into one of the nation's most respected medical programs. Dr. Magnuson believes that "if the program can be held together for another year, the chances are good that the program will be continued, no matter who runs the Veterans Administration or its medicine. By that time we'll have so many satisfied customers among the veteran-patients that any effort to change the program radically will be resisted by the veterans themselves."

Extra Pay for Regular Army Physicians

Physicians and dentists brought into the Army under the specialized training program do not get the $100 a month authorized by act of Congress for Regular Army medical and dental corps officers. This is reported to have caused a morale problem for the 83 per cent of the Army's 8,350 physicians and dentists not in the Regular Army. The War Department is studying the possibility of shortening to six months the one year period of training now required for transfer to the Regular Army.

Senator Flanders Finds that High Prices Cause Undernourishment

Senator Flanders, Vermont Republican who has been conducting public hearings in New York on the high cost of food and clothing, declared that food prices have climbed so high in metropolitan areas that some white collar workers and low-salaried job holders are "seriously undernourished." He described as the "submerged population" those persons whose family incomes have lagged behind the rise in the cost of living.

GOVERNMENT SERVICES

ARMY

MEETING OF LIBRARY CONSULTANTS

The fourth annual meeting of the Honorary Consultants to the Army Medical Library was held in Washington, D. C., October 10-11 under the presidency of Dr. John J. Fulton. Following meetings of the standing committees at the Library a meeting was held at the Hotel Statler. Col. Joseph G. McNinch, M.D., presented a report on the Army Medical Library; other reports were made by the chairmen of the standing committees and the secretary-treasurer. The dinner meeting was addressed by Gen. Paul Hawley, Drs. Walton B. McDaniel and Chauncey D. Leake. On Saturday at a professional meeting the following subjects were discussed: medical literature in Europe, medical abstracting, a report on UNESCO meeting in Paris, the Library's public services, sources of acquisitions, classification and historical sketch of the attempts to get a new library building.

The Surgeon General recently announced the appointment of the following Consultants to the Army Medical Library; Lieut. Col. Leon L. Gardner, M. C., U. S. A.; Dr. William S. Middleton, dean, University of Wisconsin Medical School, Madison; Dr. Benjamin Spector, professor of anatomy, Tufts College Medical School, Boston, and Mr. Wyllis E. Wright, librarian, Williams College.

Colonel McNinch, director of the Army Medical Library, and Dr. Donald O. Wagner, chief historian of the Historical Division, attended the British Empire Conference of Medical Historians, World War II, at Ottawa, Ontario, Canada, September 24-26.

CHIEF OF MEDICAL SERVICE CORPS

The Surgeon General's Office has announced the appointment of Col. Othmar F. Goriup as the first chief of the recently created Medical Service Corps of the Army Medical Department. The Medical Service Corps, which was established by the last Congress, will include commissioned specialists in various fields allied to medicine, such as bacteriologists, chemists, electronic experts, pharmacists, entomologists, psychologists and sanitary engineers. Colonel Goriup for three years during the war was chief of the Supply and Operations Division, Office of the Surgeon, Headquarters, Army Transport Command, Washington, D. C. He has a B.S. degree from St. Bonaventure and graduated in pharmacy from the University of Pittsburgh. He is a member of the American Chemical Society, the American Society of Hospital Pharmacists and the American Pharmaceutical Association.

PERSONALS

Dr. Jesse D. Stark, New York, has been appointed surgical consultant in radiology for the station hospital at the U. S. Military Academy, West Point, and consultant for the First Army headquarters at Governors Island.

Brig. Gen. Guy B. Denit has been relieved from duty in the Surgeon General's Office and assigned as surgeon, First Army headquarters, Governor's Island, New York, relieving Brig. Gen. Charles M. Walson, who has been retired.

PUBLIC HEALTH SERVICE

FUNDS FOR NONFEDERAL CANCER RESEARCH FACILITIES

The last Congress authorized the U. S. Public Health Service, through the National Cancer Institute, to grant funds for the construction of nonfederal cancer research facilities and, when necessary, for acquisition of land. While the funds appropriated for this year permit only a small beginning, the Public Health Service has written to the deans of medical schools announcing that the National Cancer Institute is prepared to receive applications for grants-in-aid to assist institutions in the construction and equipment of laboratory or clinical research buildings and the acquisition of lands therefor when facilities will be devoted exclusively to investigations of cancer. While each proposal will be studied in detail, under provision of the law, no application will be approved without recommendation by the National Advisory Cancer Council, which has established a series of principles for recommending grants for construction. While no one of the six principles will be the determining factor, they are for the guidance of applicants preparing an application for grants. Among the principles are: (1) preference to be shown for projects set up in the atmosphere of a university with a medical school; (2) preference to be shown for institutions able to contribute a large portion of the construction cost, and (3) preference to be shown for institutions actively cooperating in a state cancer control program. The next meeting of the Cancer Council will be held December 8-9, and applications to be reviewed at that time should be submitted to the National Cancer Institute, U. S. Public Health Service, Bethesda 14, Md., by November 1.

MISCELLANEOUS

SALE OF AUTOCLAVES AND STERILIZERS

About 25,000 units of government surplus unused autoclaves and sterilizers are being offered for sale at low prices by the War Assets Administration. The property ranges from small instrument sterilizers to large, hospital-type batteries and is usable for dressings, instruments, hypodermic needles and water. Included in the sale are stationary, portable and field types, operated by electricity, steam, gas, and by alcohol and gasoline-fired burners. Some are of standard construction, while others are of galvanized steel. The new, reduced, fixed prices range downward from less than half to as low as 11 per cent of acquisition costs. The prices established for priority claimants, wholesalers and exporters are subject to a 15 per cent mark-up to small retailers. Eligible nonprofit, tax exempt institutions may purchase equipment at a discount of 95 per cent. All orders received after Oct. 16, 1947, will be filled without regard to priorities. All items are sold on an "as is, where is" basis. A circular listing all items of the sale, with descriptions, acquisition costs, prices and conditions of sale, may be obtained from any War Assets Administration Customer Service Center, but all orders should be addressed to WAA Customer Service Center, 4th and Jefferson Drive, S. W., Washington 25, D. C.

SALE OF WATER PURIFICATION CAPSULES

Four hundred and eighty-five thousand packages of water purification capsules, canteen size, are now on sale as surplus government property. Each package contains a hundred capsules in vials of ten each. The price per package to wholesalers is 5 cents and to small retailers 6 cents. The minimum purchase is one thousand packages. Offers to purchase should be sent to the War Assets Administration, Customers Service Center, Army Base, Boston 10. The sale closes October 27. Physicians who are veterans and who have certain priorities in this sale must submit a photostatic copy of their honorable discharge from the service and must fill in form 1175 A entitled "Veterans Certification to Purchase Surplus Property for Business Use."

PHYSICIANS SEPARATED FROM SERVICE

ARMY MEDICAL CORPS OFFICERS RECOMMENDED FOR/OR RELIEVED FROM ACTIVE DUTY

Alabama

Accinno, Mario A.....South Birmingham
Pitts, Edward B.............Birmingham
Shamblin, William J.........Jacksonville
Steinberg, Benjamin J.......Jacksonville
Stubbins, Sam G. Jr.........Birmingham

Arkansas

Beeson, Charles R............Little Rock
Center, William M...........Alpena Pass
Hudgins, Paul T..................Searcy
Walker, Walter L..............Hunnoke
Wilkins, William T.........Cotton Plant

California

Aijian, Haig S...................Pasadena
Alston, Edwin F...............San Diego
Ayres, Samuel III.............La Canada
Bloom, Gerald B..............Inglewood
Gifford, Houghton.........San Francisco
Pohlman, David A.............Pasadena
Pokorny, Charles..................Visalia
Pope, Glenn A....................Oakland
Powers, Edward S..........Los Angeles
Sloan, Ralph V..................Glendale
Smith, Wesley S...............San Diego
Stark, John H.................Los Angeles
Zimmerman, William T.....Los Angeles

Colorado

Hamlin, Howard H..............Denver
Parry, Thomas Mathews...Wheat Ridge
Philpott, Ivan W.................Denver

Connecticut

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Pola, William E............New Britain
Root, James H. Jr.............Waterbury
Strickland, Harold..............Meriden

Delaware

Yarrow, Morris.............Wilmington

District of Columbia

Beaconsfield, Peter..........Washington
Bier, Robert Allan..........Washington
Brown, Raymond N.........Washington
Furchtgott, Ludwig A.......Washington

Florida

Bryant, Henry Herbert III.......Miami
Gurganious, Allen P..............Palatka
Weems, William H....West Palm Beach
Withers, Robert W. IV..........Tampa

Georgia

Funk, Forest J. Jr................Atlanta
Phillips, William C..............Richland
Pritchard, Paul B. Jr...........Augusta
Turner, Edwin Witcher.........Atlanta
Wilson, Frank A. III.............Leslie

Illinois

Anday, George J.................Chicago
Hoge, Walter Grimmett.........Chicago
Meyerson, Solomon B...........Chester
Paull, Murry M..................Chicago
Peterson, George H...................Elgin
Porter, George L...................Urbana
Rogers, Raymond J........Melrose Park
Schiloky, John L.............Springfield
Stone, Joseph G....................Cicero
Udesky, Herbert L...............Chicago
Weinstein, Seymour.............Chicago
Zeller, Robert W.................Chicago

Indiana

Block, Melvin A...............Evansville
Emmons, Robert W.................Lapaz
Hoffman, Arthur F.........Fort Wayne
Parker, John T.........................Gary
Wisch, Albert J....................Whiting
Zweig, Elmer S..............Fort Wayne

Iowa

Frein, James J..............Des Moines
Porter, Robert J.............Des Moines
Prewitt, Leland H.............Ottumwa
Wehrspann, Donald H...........Ottosen

Kansas

Callahan, William P. Jr.........Wichita
Davis, George R.................Studley
Kuhn, William Frederick...Kansas City
Wilson, William E...........Greensburg

Louisiana

La Cour, Bennett Joseph Jr.......Welsh
Michaelson, Julius..........Baton Rouge
Prosser, Charles S. Jr........Alexandria
Van Horn, Robert B.........Shreveport
Wallace, Robert Bruce Jr....Alexandria
Yearwood, Hugh M.........Shreveport

Maine

Cohen, Felix.....................Auburn
Pressey, Harold E..............Bangor
Proctor, Ray A.................Caribow

Maryland

Gluck, Julius.................Baltimore
Polk, William G..............Baltimore
Wilson, Thomas L.......Havre de Grace
Wolfinger, Walter L.........Smithsburg

Massachusetts

Britton, Lee..................Stoughton
Burnett, Joshua Bent........Newtonville
Higgins, Robert Burke....West Newton
Landau, David...................Boston
Pelkus, Henry Leo Jr.........Roslindale
Pinzino, Charles J..............Brockton
Spelfogel, Benjamin...........Mattapan

Michigan

Barstow, Richard G.............Midland
Cavins, Carl S....................Detroit
Pelczar, Walter Edward.........Detroit
Phillips, Robert W...............Remus
Swanson, George F............Newberry
Weinstock, Adolph..........Fort Custer
Wikiera, Edward S..............Detroit

Minnesota

Alden, John F.................St. Paul
Christensen, Mentor H........Northfield
Mark, Hilbert........North Minneapolis
Martin, George R...........Minneapolis
Quello, Robert O......South Minneapolis
Taylor, Donald E...............St. Paul

Mississippi

Heard, Kenneth M..............Oxford
Pennebaker, D. McBride....New Albany

Missouri

Avery, Hiram H...........Kansas City
Koehler, John William..Webster Groves
Martin, Bruce Carson.........St. Louis
Petersen, F. Joseph...Richmond Heights
Powell, Norman Bauer.....Stewartsville
Sterling, Charles E............St. Louis
Watson, John Sharon..........St. Louis
Wilson, Thomas P....Richmond Heights

Montana

Marchello, Albino J..........Red Lodge

Nebraska

Parrillo, Orest Joseph..........Lincoln
Placek, Louis Thomas.........Columbus
Schrock, Joseph B............Scottsbluff
Townley, Frank N.............Kenesaw

Nevada

Goodin, William L................Reno

New Jersey

Penchansky, Samuel Joseph.....Bayonne
Pinsky, Harry A................Camden
Preece, John D..................Trenton
Price, Herman P.............Ridgewood
Schultz, Leo Paul......West New York
Sparks, Spurgeon Jr.............Orange
Szot, Alexander C...........Wallington

New York

Becker, Bernard..............Brooklyn
Berger, Arthur J.............New York
Bernhardt, Donald R...Forest Hills, L. I.
Bissell, Bradford..................Ithaca
Brooks, George W. Jr..........Norwich
Brown, Henry.................New York
Burns, John L. Jr..............Syracuse
Burrett, John B...............New York
Campbell, Chester R......Queens Village
Caney, Wilbur H..............Waterford
Canning, John A..........Richmond Hill
Caro, Hugo P..................Brooklyn
Cavanagh, James E.........New York
Chandler, Jesse S...............Jamaica
Chase, Jules....................Brooklyn
Chasko, Stephen G........Jamaica, L. I.
Custer, Benjamin S.............Fredonia
D'Alois, Mario D..............Tuckahoe
Daly, Stephen L..............New York
Drooz, Richard B.................Albany
Elia, Joseph C.............Niagara Falls
Francobandiero, Frank J........Brooklyn
Frecker, George N. Jr........Whitestone
Freedman, Harry L............Plattsburg
Fried, Charles T....................Bronx
Friedman, Karl...........Freeport, L. I.
Fuchs, Marvin...................Brooklyn
Gillick, Edward E. Jr......Niagara Falls
Glatzer, Abraham...............Brooklyn
Grenley, Philip..................Brooklyn
Gross, Ludwik..................New York
Joseph, Edward D............New York
Lally, John E......................Bronx
Laster, Merny M..............Brooklyn
Lazarus, William Jay.........Brooklyn
Marcus, David.............Astoria, L. I.
Marton, Richard S............New York
Mazzei, Michael R.......Stapleton, S. I.
Miller, Bernard J..............Hicksville
Nathan, Arnold............Kew Gardens
Nattis, Hyman..................Brooklyn
Neumann, Gottfried..........New York
Nevins, Thomas F. Jr.........Brooklyn
Newman, Albert B...........New York
Nuland, William................Brooklyn
Obrinsky, William............New York
O'Connor, Maurice N.........Springville
Olmstead, Edwin V............Edmeston
Orange, Michael................Brooklyn
Orton, Robert C..............New York
Osborne, Raymond L...Forest Hill, L. I.
Palitz, Laurence L............New York
Palmeri, Vincent J..............Newark
Papier, David...................Brooklyn
Parnes, Irving H...............Brooklyn
Pfluke, Hugh E...............Rochester
Pisani, Antonio J.............New York
Pitman, Louis K..............New York
Polimeni, Louis J...........East Chester
Powell, Lucius L.............Rochester
Power, William R.........Merrick, L. I.
Quadfasel, Fred A............New York
Quinn, William P...........Corona, L. I.
Rekate, Albert C............East Aurora
Richards, Charles C. B.........Rochester
Sang, Jack......................New York
Schnap, Emil H..................Albany
Schwartz, Bernard M.........New York
Selverstone, Louis A.........New York
Smith, John E. V...............Bayville
Smith, Stephen III............New York
Spitzer, Jerome J..............Brooklyn
Spivack, Louis Leonard...........Bronx

PHYSICIANS SEPARATED FROM SERVICE

New York—Continued

Stevens, Richard H............Tuckahoe
Stolfi, Julius E.................Brooklyn
Stone, Martin Lawrence..........Bronx
Travers, James Joseph..Rockville Center
Von Boistel, George C.......Schenectady
Weichsel, Herbert Spencer...New York
Winkler, Howard A..........New York
Yahr, Melvin D................Brooklyn

North Carolina

Aycock, James B...............Lucama
Brady, Charles E............High Falls
Bundy, William L.....North Wilkesboro
Hanes, Ottis Eugene..........Greenville
Newland, Charles L.............Brevard
Phelps, John M................Creswell
Powell, Herman S..............Gastonia
Price, Homer H...................Spray
Snipes, Richard Dean...........Hamlet
Yarborough, John A...........Aberdeen

North Dakota

Chappell, Raid................Dickinson
Dehne, Edward James.........Bismark

Ohio

Berger, Peary B.............Englewood
Burgner, Earl W..................Akron
Curlis, Richard C..............Rudolph
Downey, Frank S................Sydney
Finzer, William F.............Hicksville
Gilger, William G. II.........Lakewood
Hines, Harry K...............Cincinnati
Hunt, Robert L....................Akron
Jack, Courtney L.............Cincinnati
Klamm, Nelson E.............Cleveland
Luidens, Henry...............Cleveland
Lukats, Paul G...............Barberton
McAllister, Earl D...........Chillicothe
McKinley, Melvin P...........Cleveland
Margolis, Meyer N............Cincinnati
Neff, Frank R....................London
Novy, Frank D....................Parma
Pease, Phillip Pembroke........Chardon
Pilloff, Benjamin...........Uhrichsville
Pudzinski, Edwin S............Cleveland
Rader, Guy E.................Columbus
Romito, Guy J.....................Akron
Smith, Wayne C................Van Wert
Spragens, Fred E..............Antwerp
Stukenborg, Frank X.............Toledo
Tonnous, Thomas S............Byesville
Trabue, John C................Columbus
Tyler, John L.................Cincinnati
Tyvand, Raymond Eugene......Dayton
Watson, George B.............Columbus
Whitehouse, Stanley W........Cincinnati
Wiessinger, Russell L.............Sidney
Wilson, Olin G....................Canton

Oklahoma

Chaffin, Zale............Oklahoma City
Fry, Powell E.................Stillwater
Hollingsworth, F. W.....Oklahoma City
Neal, Laile G................Ponca City
Padberg, Elder D....................Ada
Paulson, Alvin Winfred.........Clinton
Pierson, Dwight D..............Buffalo
Witcher, Jones E...............Mangum

Oregon

Andrews, Neil C................Portland
Grunow, Otto H.................Portland
Vehrs, Herman F...............Portland

Pennsylvania

Agnone, Eugene J..............Scranton
Barden, Stuart P.................Moylan
Blair, Frank W...............Philadelphia
Blaisdell, Jack S...............Bradford
Brewen, Stewart F........Warmleysburg
Buckey, Joseph T.............Nanticoke
Freinwald, Milton J.........Philadelphia
Frumin, Abraham M.........Philadelphia

Pennsylvania—Continued

Galamaga, Peter............Philadelphia
Greider, Lester S...........Millersburg
Greizman, Saul...............Pittsburgh
Groff, Robert A.............Philadelphia
Grove, Glenn P...........New Freedom
Harrison, Francis G. Jr........Gladwyne
Kirby, Claude W................Cresson
Lewis, Daniel William Jr...Philadelphia
Margolis, Bernard...........Philadelphia
Markle, Cyrus P. Jr.......West Newton
Miller, Bernard J............Philadelphia
Nicolette, Anthony J.....Mount Pleasant
Ober, Henry E..............Greensburg
Orman, Jack M.............Philadelphia
Pessolano, Carl J.......New Kensington
Pickert, Edward............Philadelphia
Pilla, Thomas E............Philadelphia
Polan, Simon................Philadelphia
Propst, James H............Philadelphia
Schwartz, William J...........Bellefonte
Spencer, James Devore.........Somerset
Spiegelman, Jay.............Philadelphia
Taeffner, John Hallman.....Philadelphia
Wilson, Dale S..............Philadelphia
Yockey, Robert H.............Zelienople
Zabarenko, Ralph N..........Pittsburgh

Rhode Island

Cashman, Charles W. Jr......Providence
Dring, Thomas J...............Newport
Maher, William F. Jr.........Providence
Stahl, Nicholas M............Providence
Tartaglino, Eugene J...........Newport
Wilson, Lloyd C..............Providence

South Carolina

Bailey, Joseph P.............Rock Hill
Bridges, Henry A.............Greenville
Fincher, Robert Chas. Jr.....Charleston
Finger, Watson C............Charleston
Garrison, James S.............Anderson
King, James L.................Columbia
Wells, Lionelle D. Jr..........Holly Hill
Young, James H...............Anderson

Tennessee

Cates, Arthur J......................Lucy
Johnson, James C. Jr...........Nashville
Magruder, Robert H...........Nashville
Moss, Ennis E. Jr..............Memphis
Neudecker, Roy M..............Jackson
Russek, Allen S............Johnson City
Slade, Chas. Kenneth....Mountain Home

Texas

Buie, James M..................Mertens
Cantrell, Roy H...................Dallas
Chorn, Etheredge H.........Fort Worth
Chrisman, William P. Jr..........Austin
Colgin, Merchant W...............Waco
Elder, John F..................Arlington
Friedman, Carl.....................Waco
Fry, Francis P. Jr...........San Antonio
Godbey, John Campbell Jr.........Dallas
Groff, Archie E.................Houston
Jayson, Arthur Victor..............Dallas
Johnson, Joseph K.................Dallas
McSpadden, Floyd F..............Phillips
Mullins, James N............San Antonio
Nester, Charles R................Houston
Nisbet, Alfred A............San Antonio
Pickle, Coy R......................Ennis
Siebel, Eldon K.................Amarillo
Smith, William C...............Lockhart
Stone, Charles T. Jr...........Galveston
Tucker, John T. Jr.........Fort Worth
Watkins, Elbert O..............Greggton
Wilcox, Melvin R. Jr........Jacksonville
Wyatt, Byron W.............San Antonio

Utah

Johnson, Robert H........Salt Lake City
Kreutzer, Elwood W......Salt Lake City
Monnett, George A..................Price

Vermont

Barney, Maurice O......East Charleston
Chester, Clarence L...........Cabot City
Creed, Joseph C..................Rutland

Virginia

Buckley, Millard R............Richmond
Davis, Kelley K...........Charlottesville
Eastham, John P..............Culpepper
Frisch, Michael R........Newport News
Frost, Robert J..................Arlington
Hooten, Claude G. Jr.........Lynchburg
Payne, Boyd Hawthorne.......Staunton
Peery, James McGuire..North Tazewell
Pugh, William T.............Lynchburg
Quarles, Joseph J. Jr............Norfolk
Raiford, Fletcher L.............Franklin
Spencer, William P........Charlottesville

Washington

O'Brien, Robert M.............Newport
Pohl, Robert L..................Spokane
Wichman, John W................Tenino

West Virginia

Alvarez, Joseph...........Meadowbrook
Clarke, George R...............Wheeling
Dobbie, John James............Fairmont
Enelow, Allen J..........Hollidays Cove
Fahey, Martin M..........Valley Chapel
Glenn, Walter J. Jr............Wheeling
Mervis, Jacob...........Hollidays Cove
Parks, Seigle W................Fairmont
Rodgers, Elrie P............Morgantown
Schnitt, Sidney..............Huntington
Shawkey, George A..........Charleston
Soulsby, Paul C....................Pratt
Strauch, Robert O............Wheeling
Tierney, Kaden..............Clarksburg

Wisconsin

Bonfiglio, Michael............Milwaukee
Chesseman, William B...........Neenah
Collins, George W.............Milwaukee
Dalrymple, Richard R.......Fond du Lac
Dangle, Harland C...........Milwaukee
Fogo, Alden E.........Richland Center
Golper, Marvin N.............Milwaukee
Gutheil, Douglas Arthur......Milwaukee
Holmes, John F.........Milton Junction
Johnson, Hobart W...........Milwaukee
Kirmse, Thomas W...........Marinette
Lehman, Roger H...............Neosho
Mullins, Glenn......................Wood
Olson, Marvin H.................Suring
Owens, Clarence G.............Madison
Presti, Arthur A..............Milwaukee
Seno, Elvira C...............Burlington
Sheehan, Edward T...........Milwaukee
Slaybaugh, James C...........Milwaukee
Waskow, William L...........Milwaukee
Weiner, Leonard R...........Milwaukee
Yellenik, Andrew C...........Milwaukee
Zamil, Edward................Milwaukee

Wyoming

Adams, Herbert V..............Sheridan

Canada

Gettas, Peter G.........Simcoe, Ontario

Hawaii

Burden, John A..........Lahaina, Maui
Lui, Alfred Hymn Fook.......Honolulu

Puerto Rico

Garcia-Garcia, Jose A............Arroyo
Guzman, Manuel Jr............Santurce
Marchand, Juan R...............Arecibo
Montalvo, Andres H...........Santurce
Mudafort, Rafael M............Santurce
Munoz, Rafael..............Rio Piedras
Romero, Calixto A.............Santurce
Sanchez, Hilarion Jr...............Ponce

Medical News

(Physicians will confer a favor by sending for this department items of news of general interest: such as relate to society activities, new hospitals, education and public health. Programs should be received at least two weeks before the date of meeting.)

ALABAMA

Wins Prize for Book.—Dr. Wallace Marshall, Mobile, was awarded first prize for his book, "Noise of Great Waters," in the American Physicians Literary Guild competition at Atlantic City, N. J.; last June. The 600 page historical study of Mobile's role in the Civil War may soon be published. Dr. Marshall, a member of the Outagamie County Medical Society, was formerly associated with the Appleton Clinic, Appleton, Wis., and has been practicing in Mobile since 1943.

CALIFORNIA

Symposiums on Heart Disease.—The California Heart Association is sponsoring its annual postgraduate symposium on heart disease October 23-24 at Patriotic Hall, Los Angeles. Symposiums on recent advances in diagnostic procedures and on hypertension and a cardiac panel discussion are included in the program. Among others, Drs. Paul D. White, Boston, and Tinsley R. Harrison, Dallas, Texas, will take part. The meeting is open to all physicians. The fee is $15.

Air Ambulance Service.—The coast air ambulance, San Francisco, has made air ambulance service available to patients and physicians. Using San Francisco and Oakland airports as bases, the company will accept a call to or from anywhere in the United States, Canada or Mexico The company at present operates one plane, accommodating four persons. Stretcher equipment is interchangeable with land ambulances. An ambulance company of Oakland also equips the plane when needed with a portable resuscitator and an inhalator.

Public Health Training Program.—The State Department of Public Health has been granted $105,000 by the W. K. Kellogg Foundation for a four year period to finance a field training program for public health personnel. The Santa Barbara County Health Department will be a fixed station for training various types of public health personnel; disbursed training stations in other local health departments will be selected for field training. The Office of Recruitment and Training in the state health department will be responsible for general supervision of the program.

Outbreak of Conjunctivitis in Industries Checked.—Through joint action of the Division of Industrial Hygiene, Los Angeles County Health Department, the Los Angeles City Industrial Hygiene Service and the State Bureau of Adult Health, an outbreak of epidemic conjunctivitis in the Vernon area of Los Angeles County was checked. During the last two and one-half weeks in August, no new cases were reported. A total of thirty-nine cases had been definitely diagnosed and twenty-two probable cases were found in employees of twenty-seven companies in the Vernon and contiguous industrial areas. In seventeen other plants eighteen suspected cases were discovered.

COLORADO

School for Medical Record Librarians.—A twelve months' training school for medical record librarians will open Jan. 1, 1948, at the University of Colorado Medical Center, Denver. Students who have completed two years of study in an accredited college and are proficient in shorthand and typing are eligible and on graduation will receive a certificate and be prepared to take an examination leading to certification as a registered medical record librarian. The course will include three months of theory and thirty-eight weeks of internship, during which the student will learn the practical phase of the science. A limited number of scholarships will be available.

A new major course in medical records leading to the degree bachelor of science in business will also be offered by the university. Students will take the first three years of the major in medical records on the Boulder campus of the School of Business, and the fourth year at the School of Medicine in Denver. The course stresses studies in the sciences basic to an understanding of medical terminology, records and research and the aspects of business training necessary for efficient office management. The final year provides specialized training in the records division in medical terminology, all branches of hospital practice as they affect the records division, medicolegal matters, medical ethics and the organization and management of medical records departments.

CONNECTICUT

Research on Infectious Hepatitis.—Dr. Horace T. Gardner Jr., an instructor in preventive medicine, Yale School of Medicine, New Haven, has been assigned to the Army Research Laboratory in Germany to continue the joint Yale-Army investigations of infectious hepatitis. This research began in 1943 when a special commission of two members of the Yale faculty was assigned by the Virus and Rickettsial Disease Commission of the Army Epidemiological Board. Dr. Gardner received his M.D. degree from Yale in 1941 and served as a medical officer in the army for four years.

Personal.—Dr. J. Grant Irving, Hartford, has been promoted from associate medical director to medical director of the Aetna Life Insurance Company. Dr. Irving joined the company in 1935 as assistant medical director. During the war he served in the Medical Corps, Army of the United States.——Dr. John J. Dobkins, Stanford, has been appointed chief medical consultant for the Division of Rehabilitation, State Department of Education. Dr. Dobkins in 1942 entered the U. S. Army Medical Corps, in which he served four years, then took postgraduate training at Harvard Medical School, Boston.——Dr. Jan Nyboer, a clinical instructor at Yale University School of Medicine, New Haven, has been named assistant professor of pharmacology at Dartmouth Medical School, Hanover, N. H.

GEORGIA

School Year Extended.—The University of Georgia School of Medicine, Augusta, announces an addition of three weeks to its calendar, beginning 1947-1948, the increase changing the school year from thirty-three to thirty-six weeks. Classes began September 11 and will end June 19, 1948.

Personal.—Dr. G. Lombard Kelly, dean, University of Georgia School of Medicine, has been appointed as the representative of the Medical Association of Georgia to the Hospital Advisory Committee, created by act of the legislature, Feb. 1, 1946. Dr. Kelly succeeds the late Dr. Charles W. Roberts, Atlanta.——Dr. James A. Paullin, professor of clinical medicine, Emory University School of Medicine, Atlanta, and former president of the American Medical Association, has been appointed a member of the Federal Hospital Council of the U. S. Public Health Service to succeed Mrs. Evelyn Hicks of Birmingham, whose term has expired.

ILLINOIS

The First State Sanatorium.—Plans for the construction of the first state tuberculosis sanatorium in Illinois at Mount Vernon, adjacent to the proposed Good Samaritan Hospital, were approved October 3. The two hundred bed, fireproof building to be operated under the supervision of the State Department of Public Health will have an outpatient department, facilities for medical and surgical treatment, occupational therapy and rehabilitation services. About $872,000 has been requested from the federal government to meet the cost of construction. The remainder will come from state funds which have already been appropriated.

Graduate Conference at Effingham.—The seventh councilor district of the Illinois State Medical Society will hold a graduate conference at Benwood Hotel, Effingham, October 30, beginning at noon and extending into the evening. Speakers on the program, all from Chicago, will be: Dr. James J. Callahan, "Fractures"; Dr. Harry M. Hedge, "Dermatoses as Seen in General Practice"; Dr. Richard K. Gilchrist, "Rectal Surgery," and Dr. H. William Elghammer, "Progress in Pediatrics." At the evening meeting Dr. Irving H. Neece, Decatur, will speak on "Tumors of the Kidney" and Dr. Marino F. Vidoli, Decatur, on "Pathologic Discussion of Tumors."

Chicago

The Nineteenth Belfield Memorial Lecture.—Dr. Hans Selye, University of Montreal, Montreal, Canada, delivered the nineteenth annual William T. Belfield Memorial Lecture on "The Role of Hormones in Hypertension" at the regular meeting of the Chicago Urological Society October 16 at the Palmer House.

Dr. Gardner Appointed Department Head.—Dr. George H. Gardner, professor of gynecology, Northwestern University Medical School, has been appointed chairman of the department of obstetrics and gynecology, succeeding Dr. Arthur H. Curtis, who has retired. Dr. Gardner has been professor of gynecology at Northwestern since 1946, assistant dean of the medical school since 1942 and a member of the faculty since 1927. He received his medical degree from Johns Hopkins University, Baltimore, 1921, and has been in practice in Chicago since 1926.

Laboratory for Study of Physical Environment.—The University of Illinois College of Medicine broke ground September 26 for the erection of a $400,000 laboratory for the study of physical environment in health and disease. The laboratory, to be known as the Aero Medical and Atmospheric Institute, will be equipped with apparatus for the study of aviation medicine and the study of cold, heat and barometric changes. The building, 146 by 55 feet, will be adjacent to the Research and Educational Hospitals, University of Illinois, and the college of medicine.

Address on the Porphyrin Problem.—The Institute of Medicine of Chicago and the Chicago Society of Internal Medicine will hear Dr. Cecil J. Watson, professor of medicine, University of Minnesota Medical School, Minneapolis, Friday evening, October 24, at the Palmer House. His subject will be "Some Aspects of the Porphyrin Problem in Relation to Disease." This address is in addition to the regularly scheduled lecture in the series, "Where We Stand in Medicine Today," which will be delivered in the afternoon in the assembly room of the institute.

Dr. Brunschwig Goes to Cornell.—Dr. Alexander Brunschwig, formerly professor of surgery at the University of Chicago School of Medicine, has been appointed professor of clinical surgery at Cornell University Medical College and head of the department of surgery at Memorial Hospital for the Treatment of Cancer and Allied Diseases, New York. Dr. Brunschwig, a graduate of Rush Medical College, Chicago, 1926, was on the staff of Boston City Hospital before he came to the University of Chicago. He was a fellow of the National Research Council with Professor Rene Leriche in Strasbourg, France, 1930 to 1931, and has served on the staffs of the Chicago Clinics and Albert Merritt Billings Hospital, Chicago.

Dr. Miller to Head Department of Psychology.—Dr. James G. Miller, chief, clinical psychology section, neuropsychiatric division, central office of the Veterans Administration, Washington, D. C., has been appointed chairman of the department of psychology at the University of Chicago effective Jan. 1, 1948. Dr. Miller received his master's degree in psychology in 1938 and his doctor of medicine degree cum laude in 1942 from Harvard University, Boston, where he subsequently taught psychiatry and psychology. He gave the Lowell lectures in Boston in 1944 on "The Psychology of Reason and Belief." He served in the medical corps of the Army of the United States during World War II.

The Annual Ranson Lecture.—The annual Ranson Lecture in neurology will be given October 24 at 5 p.m. in Archibald Church library, Northwestern University Medical School, by Dr. Francis J. Braceland, professor of psychiatry in the Mayo Foundation Graduate School, University of Minnesota, on "The Practice of Psychiatry." The lecture is open to the public. Dr. Braceland is consulting psychiatrist to the Mayo Clinic, Rochester, Minn., and secretary of the American Board of Psychiatry and Neurology. He served as chief of neuropsychiatry, Bureau of Medicine and Surgery, Navy Department, during the recent war. The Ranson lectureship was named in honor of the late Dr. Stephen W. Ranson, professor of neurology and chairman of the medical school's Institute of Neurology. It is sponsored by the Phi Beta Pi medical fraternity.

MAINE

Clinical Session at Lewiston.—A Clinical Session sponsored by the Androscoggin County Medical Society will be held November 9-10 in Lewiston with clinics at Central Maine General and St. Mary's General hospitals. Subjects under discussion Monday include the use of contact lenses, advances in anesthesia, rapid treatment of syphilis, surgical treatment of gastric lesions, treatment of hip injuries, cardiac conditions in children, use of radioactive substances in treatment of blood dyscrasias and treatment of resistant genitourinary tract infections. The dinner speaker November 9 at the Hotel DeWitt will be Dr. Ashley W. Oughterson, New Haven, Conn., "Medical Aspects of the Atomic Bomb." Dr. Dwight E. Harken, Boston, will speak at the dinner at Mansion House, Poland Spring, Monday on "Cardiovascular Surgery."

MARYLAND

Bone Tumor Seminar.—A seminar on bone tumors will be held as a joint session between the District of Columbia and Baltimore City Pathology Societies, October 25 at the University of Maryland Dental Building, Baltimore. Dr. Henry S. Jaffe, New York, will act as moderator. A series of slides of the cases to be considered are being mailed to the members of both societies before the meeting.

MICHIGAN

Dr. Altland Named Acting State Health Commissioner. Dr. John K. Altland, former director of the Bureau of Local Health Services, was appointed September 22 acting commissioner of the Michigan Department of Health, succeeding Dr. William DeKleine, commissioner since 1944. Dr. Altland attended the University of Michigan Medical School, Ann Arbor, and interned at St. Mary's Hospital, Grand Rapids. After practicing in Lowell, he returned to the University of Michigan, receiving his masters degree in public health in 1938. He served as director of the Grand Traverse County Health Department for two years and the Barry County Health Department for six years, one and a half of which were spent with the United States Coast Guard and the United States Public Health Service. He came to the Michigan Department of Health as director of the Bureau of Local Health Services in April 1946.

MISSISSIPPI

Personal.—Dr. Felix J. Underwood, Jackson, vice chairman of the Mississippi State Medical Board and executive officer of the Mississippi State Board of Health, has been made a member of the State Medical Education Board.

Loans for Medical Students.—All medical students interested in applying for loans to become effective in February and March, 1948, must file applications by Nov. 1, 1947, for consideration by the board. Deadline for receipt of applications for midyear loans was set by the State Medical Education Board as Dec. 20, 1947, with receipt of all credentials for applications then pending set at Jan. 8, 1948.

NEW YORK

Courtland County Eliminates Raw Milk.—The Courtland County Health Department, which issued no permits for the sale of raw milk last year, is among the first to attain this protection for citizens. In at least ten other counties 99 per cent of the milk sold under permit is pasteurized.

Discontinue Distribution of Antipneumococcus Serums.—Because of a continuing decrease in the demand for antipneumococcus serums, the Division of Laboratories and Research of the New York State Department of Health will discontinue general distribution of the product. During the last twelve years serums for thirty-one types have been furnished. As long as the supply on hand lasts, serums for types 1 through 33, with the exception of 26 and 30, will be supplied from the Central Laboratory, Albany, and the Branch Laboratory, New York, for the treatment of special types of pneumonia.

Graduate Teaching Day for Monroe County.—The state medical society and the state health department have arranged a graduate teaching day for Monroe County Medical Society November 13 at the Rochester Academy of Medicine Building. At 11 o'clock Dr. Paul Reznikoff, New York, will speak on "Diagnosis and Treatment of Anemia"; Dr. Clarence E. de la Chapelle, New York, will follow with "Management of Acute Cardiovascular Emergencies." In the afternoon Dr. George E. Anderson, Brooklyn, will speak on "Diabetes Mellitus, Its Modern Interpretation and Treatment"; Dr. Edward J. Stieglitz, Bethesda, Md., on "Health in an Aging Population," and Dr. H. McLeod Riggins, New York, "Asymptomatic Thoracic Diseases."

New York City

United Hospital Fund Campaign.—On October 8 the United Hospital Fund inaugurated its annual campaign to meet the operating deficits of its eighty-nine voluntary hospitals in 1947. Under the direction of William H. Jackson, president of New York Hospital, the fund will seek $2,383,887. The voluntary hospitals gave medical care to more than a million New Yorkers of all races and creeds last year.

Dr. Browder Appointed Director of Surgery.—Dr. E. Jefferson Browder, professor of clinical surgery, Long Island College of Medicine, New York, has been appointed director of surgery on the college division of the Kings County Hospital, succeeding Dr. Robert F. Barber, retired. Dr. Browder received his medical degree from Johns Hopkins University School of Medicine in 1920. He is director of the neurological unit at the Brooklyn Hospital and director of neurosurgery at the Kings County Hospital, as well as consultant neurosurgeon to various hospitals in the city.

Academy Section on Microbiology.—The New York Academy of Medicine formally approved the organization of a section on microbiology at the stated meeting, May 1, 1947, following a request submitted to the council by thirty-three physicians. The organizers of the section, who will serve as officers pro tem until the official election in May, 1948, are: Drs. Gregory Shwartzman, chairman, and Harry Most, secretary, along with an advisory committee. The scope of the section will encompass bacteriology, mycology and parasitology, viruses and rickettsial maladies of unknown etiology, immunology, chemotherapy, pathology relative to microbiology and methods of study adopted from related sciences. The section meets on the third Wednesday of each month during the academic year.

NEW MEXICO

Establish Lovelace Foundation at Albuquerque.—The Lovelace Foundation for Medical Education and Research was established at Albuquerque on September 25, when the board of trustees held its first meeting. The foundation is the outgrowth of the Lovelace Clinic, founded in 1922 and heretofore privately owned by Drs. William R. Lovelace, William R. Lovelace II and Edgar T. Lassetter, who have "irrevocably given and donated . . . all physical assets, medical and research equipment, library and other things of value heretofore belonging to them personally and used by them in the practice of medicine and surgery." The clinic will now be operated under the direction of a board of governors, and all income, after deducting operating expenses, will accrue to the Lovelace Foundation. The twenty-two physicians on the staff will provide diagnosis and treatment on a fully paid, partly paid or free basis, depending on individual circumstances and regardless of creed, race or station in life. The foundation's objectives will be research on the causes, prevention, relief and therapy of human disease; research in aviation medicine; promotion of public health; instruction for practicing physicians in conjunction with an approved medical school; study of the effect on health of residence in the Southwestern United States, with special emphasis on its relation to arthritis, sinusitis and diseases of the chest; cancer detection and treatment, and the dissemination of information derived from these activities. Fellowships will be awarded to enable young physicians to take graduate training at the clinic in preparation for recognition as qualified specialists, through affiliation with an approved medical school.

OHIO

Director of University Hospitals.—Dr. William B. Seymour has been appointed director of University Hospitals, Cleveland, effective November 1, succeeding Dr. Ralph H. Bishop Jr., who has become head of a new committee to establish a Medical Center in Cleveland. Dr. Seymour, a graduate of Western Reserve University School of Medicine, Cleveland, was assistant director under Dr. Bishop during the war and held a position on the faculty, senior clinical instructor in medicine, Western Reserve School of Medicine. He was an intern at the New Haven Hospital in Connecticut, 1935-1937, then became assistant resident in medicine at University Hospitals, Cleveland, for one year.

Fels Institute Research Laboratories Dedicated.—New research laboratories for the Fels Research Institute for the study of human development, Yellow Springs (The Journal, May 25, 1946, p. 348) were dedicated October 17. Margaret Mead, Ph.D., New York, anthropologist of the American Museum of National History and formerly executive secretary, Committee on Food Habits of the National Research Council, gave the address. The institute is part of the program of the Samuel S. Fels Fund of Philadelphia. A dinner in honor of Dr. Fels was given by the board of trustees and the faculty of Antioch College that evening.

PENNSYLVANIA

Society News.—At the meeting of the Pennsylvania Association of Clinical Pathologists in Pittsburgh, September 13-14, Dr. Frederick O. Zillessen, Easton, was elected president; Dr. Theodore R. Helmbold, Pittsburgh, vice president, and Dr. Henry F. Hunt, Danville, secretary-treasurer.——At the recent annual meeting of the Pennsylvania Radiological Society the following officers were elected: Dr. Ralph D. Bacon, Erie, president; Dr. Leslie H. Osmond, Pittsburgh, president-elect, and Dr. James M. Converse, Williamsport, secretary-treasurer. The next annual meeting will be held at Erie, May 21-22, 1948.

Philadelphia

Alvarenga Prize Awarded to Dr. Aronson.—In recognition of his studies on the evaluation of BCG vaccine in the control of tuberculosis the College of Physicians of Philadelphia on July 14, 1947, awarded the Alvarenga Prize to Dr. Joseph D. Aronson, Wayne, of the U. S. Bureau of Indian Affairs. The Alvarenga Prize was established by the will of Pedro Francisco daCosta Alvarenga of Lisbon, Portugal, an associate fellow of the Philadelphia College of Physicians, to be awarded annually by the College on each anniversary of the testator's death, which occurred July 14, 1883.

SOUTH CAROLINA

Sixth Annual Postgraduate Seminar at Charleston.—The sixth annual Postgraduate Seminar of the Alumni Association of the Medical College of the State of South Carolina, Charleston, will be held at the college November 4-6. The out-of-state speakers will be:

Brian B. Blades, Washington, D. C., Surgical Treatment of Bronchiectasis.
Richard B. Cattell, Boston, Carcinoma of the Colon and Rectum.
Frank R. Ober, Boston, Arthritis from the General Practitioner's Point of View.
John L. Parks, Washington, D. C., Danger Signals in Obstetric Practice.
Arild E. Hansen, Galveston, Tex., Rheumatic Fever.
Colin M. MacLeod, New York, Control of Respiratory Infections.
Marion A. Blankenhorn, Cincinnati, Anuria and the Management of Acute Suppression of Urine.
Henry B. Mulholland, Charlottesville, Va., Treatment of Diabetes Mellitus.

At the Founders Day banquet, Francis Marion Hotel, the speaker will be Herman G. Weiskotten, dean and professor of pathology, Syracuse University College of Medicine, Syracuse, N.Y.

WISCONSIN

Faculty Promotions.—The University of Wisconsin Medical School, Madison, has announced the promotion of Dr. Marc J. Musser Jr. to associate professor of medicine; Dr. Carl S. Harper to associate professor of obstetrics and gynecology; Edgar J. Witzemann, Ph.D., to professor of physiologic chemistry; Dr. Ezra E. Neff to professor of surgery; Drs. Noel A. Gillespie and Clayton P. Wangeman to associate professors of surgery, and Van R. Potter, Ph.D., to professor of cancer research.

GENERAL

Diabetes Association Moves Office.—The American Diabetes Association, Inc., has moved its executive offices from Cincinnati to 1 Nevins Street, Brooklyn 17, N. Y. Dr. Edward S. Dillon, Philadelphia, is president; Dr. George E. Anderson, Brooklyn, secretary, and Dr. William Muhlberg, Cincinnati, treasurer.

Tuberculosis Scholarships.—The National Tuberculosis Association has awarded three scholarships to physicians for a four week study in the Trudeau School of Tuberculosis at Saranac Lake, N. Y., and two weeks' additional study at Bellevue Hospital, New York. The physicians are Drs. Ralph M. Overstreet Jr., West Palm Beach, Fla.; E. Harold Laws, Seattle, and Gaza E. Buda, Stratford, Conn.

Occupational Therapy Convention.—The American Occupational Therapy Association will hold its convention November 3 to 5 at the Hotel del Coronado, San Diego, Calif., under the presidency of Winifred C. Kahmann. Subjects to be discussed include Some Aspects of the Role of a Psychiatrist in Present Day Society, Medical Rehabilitation of Paraplegics, Importance of Occupational Therapy as a Basic Unit of Physical Medicine and Occupational Medicine in Poliomyelitis.

National Committee for Mental Hygiene.—This organization will hold its annual meeting in New York, November 12-13, with representatives of government, industry, medicine, education and religion addressing the sessions. Among the speakers will be Dr. Milton J. E. Senn, New York, Dr. Frederick W. Dershimer, Wilmington, Del., Dr. Arthur H. Ruggles, Providence, R. I., Dr. Erich Lindemann, Boston, Drs. Soloman W. Ginsburg, and Frank Fremont-Smith, both of New York, Dr. Jonathan C. Meakins, Montreal, Canada, and Dr. Harry S. Sullivan, Washington, D. C.

Prize Essays in Urology.—The American Urological Association offers an annual award of $1,000 (first prize $500, second prize $300 and third prize $200) for essays on the result of clinical or laboratory research in urology. Competition is limited to urologists who have been in practice for not more than five years and to residents in urology in recognized hospitals. The first prize essay will appear on the program of the forthcoming meeting of the American Urological Association, to be held at the Hotel Statler, Boston, May 17-20, 1948. Essays must be in the hands of Dr. Thomas D. Moore, 899 Madison Avenue, Memphis, Tenn., before March 1, 1948.

Society Elections.—The American Congress of Physical Medicine at its annual meeting in Minneapolis, September 2-6, elected Drs. O. Leonard Huddleston, Los Angeles, president-elect; William B. Snow, New York, vice president, and Richard Kovacs, New York, secretary.——The American Hospital

Association at the annual convention in St. Louis on September 25 made Graham L. Davis, director, hospital division, the W. K. Kellogg Foundation, Battle Creek, Mich., president; Joseph G. Norby, superintendent, Columbia Hospital, Milwaukee, president-elect, and Dr. Arthur C. Bachmeyer, director, University of Chicago Clinics, treasurer (re-elected).——At the recent meeting of the American Gastro-Enterological Association, Dr. Henry L. Bockus, professor of gastroenterology, graduate school, University of Pennsylvania, Philadelphia, became president.——Dr. Dallas B. Phemister, Chicago, was made president-elect of the American College of Surgeons at their meeting in New York September 11. Dr. Howard A. Peterson, New York, and Dr. Carl H. McCaskey, Indianapolis, were chosen first and second vice presidents, respectively.

Prevalence of Poliomyelitis.—Reports of cases of poliomyelitis for the periods indicated have been received from the division of public health methods, U. S. Public Health Service:

Division and State	Week Ended			Total to		Total *	
	Oct. 4, 1947	Oct. 5, 1946	Median, 1942-1946	Oct. 4, 1947	Oct. 5, 1946	March 16-Oct. 4, 1947	March 17-Oct. 5, 1946
New England:							
Maine	0	3	2	35	23	32	23
New Hampshire	2	12	1	22	132	18	131
Vermont	3	2	2	28	31	20	27
Massachusetts	29	33	20	275	207	268	203
Rhode Island	2	10	0	130	66	129	66
Connecticut	15	6	6	119	65	116	57
Middle Atlantic:							
New York	100	86	80	897	1,025	861	992
New Jersey	25	10	13	233	188	227	182
Pennsylvania	25	10	10	342	205	328	193
East North Central:							
Ohio	109	44	27	1,031	568	1,021	553
Indiana	7	24	10	187†	283	171†	278
Illinois	45	142	60	701	1,921	679	1,913
Michigan	44	54	16	500	712	476	704
Wisconsin	13	74	26	163	944	139	931
West North Central.							
Minnesota	6	97	22	192	2,527	179	2,526
Iowa	15	24	17	130	436	122	427
Missouri	8	65	10	99	983	89	976
North Dakota	2	10	2	68	401	63	401
South Dakota	1	18	2	11	338	9	338
Nebraska	6	51	7	167	459	160	458
Kansas	4	66	5	80	775	62	771
South Atlantic:							
Delaware	2	1	1	126	22	126	22
Maryland	12	5	5	78	76	72	74
District of Columbia	2	3	3	14	22	12	21
Virginia	10	3	3	126	91	116	85
West Virginia	11	2	2	96	59	92	56
North Carolina	23	8	8	164†	101	149†	94
South Carolina	3	0	3	22	19	21	16
Georgia	5	4	3	65	135	58	127
Florida	3	10	2	77	512	52	463
East South Central:							
Kentucky	8	3	3	78	98	77	95
Tennessee	11	6	6	106	143	94	134
Alabama	2	7	3	44	357	31	354
Mississippi	3	4	3	42	259	25	242
West South Central:							
Arkansas	2	14	3	69†	328	58†	316
Louisiana	0	11	2	44	318	26	299
Oklahoma	2	10	1	43	314	32	308
Texas	2	24	15	155	825	130	797
Mountain:							
Montana	1	4	1	23	109	21	93
Idaho	17	2	0	145	31	135	31
Wyoming	0	4	1	15	110	12	109
Colorado	3	28	6	50	834	45	833
New Mexico	2	2	2	30	146	27	145
Arizona	0	6	2	28	99	25	96
Utah	1	6	6	10	115	5	109
Nevada	0	0	0	1	3	1	3
Pacific:							
Washington	6	29	18	108	360	100	327
Oregon	0	5	7	61	126	56	122
California	21	100	43	682	1,743	533	1,656
Total	613	1,142	...	7,912†	19,644†	7,300†	19,177
Median, 1942-1946	...	....	639	10,296		9,899	

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* Last two columns show reported incidence since approximate seasonal low week (week ended between March 15 and 21).

† Figures changed by corrected reports.

Regional Meeting of College of Physicians.—The Midwest Regional Meeting of the American College of Physicians will be held at the Schroeder Hotel, Milwaukee, Wis., November 15. Speakers addressing the sessions by invitation are:

Drs. Stanley H. Gumbiner and Raymond N. Hench, Chicago, Endocarditis in the Elderly.
Kenneth Gorrigan, Ph.D., Harper Hospital, Detroit, Diagnostic Use of Radioactive Tracers.
Dr. William H. Beierwaltes, Ann Arbor, Mich., Present Status of Antithyroid Drugs.
Dr. Erwin Levin, Chicago, Effect of Enterogastrone on Gastric Secretion in Man.
Van R. Potter, Ph.D., Madison, Wis., Enzyme Studies in the Cancer Problem.
Drs. Danely P. Slaughter and Edson F. Fowler, Chicago, Studies on the Effect of Estrogens and Androgens on Mammary Cancer.
Dr. Clayton G. Loosli, Chicago, Value of Vaccination Against Epidemic Influenza.
Dr. Armand J. Quick, Milwaukee, Classification of Congenital Hypoprothrombinemia.
Dr. Sidney Friedlaender, Detroit, The Newer Antihistaminic Drugs.
Dr. Walter D. Hawk and Alden K. Boor, Ph.D., Chicago, Protective Action of Penicillin Against Bacterial Endotoxins.

Meeting on Arteriosclerosis.—The American Society for the Study of Arteriosclerosis will hold its second meeting at the Hotel Knickerbocker, Chicago, November 2-3, under the presidency of Dr. Wilhelm C. Hueper, New York. The program comprises four sessions on the anatomic, physiologic, metabolic and therapeutic considerations in the study of arteriosclerosis. Speakers addressing the sessions by invitation are:

S. J. Slinger and K. G. Gartley, London, Ontario, Canada, Experimental Coronary Arteriosclerosis in Cockerels.
Melvin H. Knisely, Ph.D., Chicago, Reduced Nutrition of the Vessel Walls as Result of Intravascular Agglutination.
Boris Schwartz, Ph.D., New York, Effect of Arteriosclerosis on Dynamics of Hypertension in the Aged.
Kenneth R. Andrews and Patrick J. V. Corcoran, St. Louis, Effect of Choline, Lipocaic, Inositol and Betaine on Cholesterol Atherosclerosis in the Rabbit.
Louis Horlick, Chicago, Role of the Thyroid in Experimental Atherosclerosis in the Chick.
M. Chieffi, St. Louis, General Oxidative Processes with Relation to Degenerative Changes in the Body.
Howard Lindberg and William B. Wartman, Chicago, Study of Renal Biopsies in Relation to Preoperative Observation and Postoperative Results of Sympathectomy.

At the banquet Sunday night at 7:30 Dr. Hans Selye, Montreal, Canada, will give an address on "Hormonal Factors in Hypertension."

LATIN AMERICA

American Otolaryngologists Visit The Argentine.—The "Club ORL of Buenos Aires" inaugurated a program to extend the study of otolaryngology and relative fields of medicine, to organize courses and conferences and to offer grants to foreigners to study in Argentina. The club meets monthly and has its own scientific journal. The Club ORL a group of otolaryngologists under the leadership of Professor Juan M. Tato, started a series of courses given by physicians from the United States by inviting, in July, 1946, Dr. George Kelemen, Boston, to give a course in pathologic anatomy of the ear, nose and throat. Dorothy Wolff, Ph.D., New York, followed with another course on pathologic anatomy of the ear in Argentina, Brazil, Uruguay and Chile. The third invitation was extended to Dr. Arthur W. Proetz, St. Louis, who lectured in November 1946 on physiopathology of the nose and accessory sinuses. The fourth invitation was extended to Dr. LeRoy A. Schall, Boston, who in July 1947 delivered lectures and demonstrated operations on patients and on the cadaver in Rio de Janeiro, Montevideo, Buenos Aires, other cities of Argentina and later in Chile and Peru.

Dr. Theodore Walsh, St. Louis, invited by the Otolaryngology Society of Argentina, delivered a series of lectures in various hospitals and scientific institutions. These lectures were accompanied with demonstrations of operative technic on patients and on the cadaver. The journeys of Professors Walsh and Schall were partly sponsored by the State Department in Washington in consideration of the cultural importance of these missions. All other expenses were met by subscriptions on the part of specialists interested in these courses in the different countries in proportion to the time given to each of them. Among the other lecturers before the club were physicians from Brazil and Chile.

Marriages

William Allen Howard to Miss Marion McAlpine Rowcliffe, both of Washington, D. C., September 5.

John Philip Timpane, Troy, N. Y., to Miss Lillian Geraldine McKenna of Belleville, N. J., August 14.

Abraham J. Kaufman, Carbondale, Pa., to Miss Shirley Zemel of South Orange, N. J., August 24.

Merle Elmer Pickett, Langhorne, Pa., to Miss Bertha Mae Shelor in Roanoke, Va., September 13.

Everett F. Conlogue to Mrs. Virginia D. Routzong, both of Dayton, Ohio, September 16.

Richard Scotlar Troxel to Miss Stella Boyko, both of Allentown, Pa., September 13.

Franklin W. F. Caird to Miss Katherine W. Regnier, both of Troy, N. Y., August 20.

Mark E. Conan to Miss Patricia Ann Eagan, both of Syracuse, N. Y., August 23.

Deaths

Daniel Lesesne Smith Sr., Spartanburg, S. C.; born in St. Stephens, S. C., July 28, 1877; Medical College of the State of South Carolina, Charleston, 1903; member of the American Medical Association, charter member of the American Academy of Pediatrics; served as a member of the state board of health; past president of the South Carolina Medical Association; helped to organize the Southern Pediatric Seminar in 1921; served as chairman of the section on pediatrics of the Southern Medical Association; physician in charge and owner of the Infants and Children's Sanitarium and medical director of the Spartanburg Baby Hospital in Saluda, N. C.; one of the board of directors of the Tubercular Sanitarium of South Carolina; attending physician of Cedar Springs for Blind, Deaf and Dumb Children; specialist certified by the American Board of Pediatrics; died in Asheville, N. C, July 7, aged 69, of heart disease.

Daniel Alison Sinclair ⊕ New York; born in Detroit Nov. 18, 1871; Columbia University College of Physicians and Surgeons, New York, 1896; served as professor of urology and president of the faculty at the New York Polyclinic Medical School and Hospital; member of the American Urological Association; specialist certified by the American Board of Urology; decorated by the French government and the recipient of British decorations for service overseas during World War I; served on the staffs of the Morrisania and Misericordia hospitals; at one time consulting surgeon for the U. S. Public Health Service at Marine Hospital, Staten Island; died July 17, aged 75, of carcinoma of the lung

Thomas Henry Farrell ⊕ Utica, N. Y.; born in Detroit, Sept. 1, 1868; Queen's University Faculty of Medicine, Kingston, Ontario, Canada, 1895; specialist certified by the American Board of Otolaryngology; member of the American Laryngological, Rhinological and Otological Society; fellow of the American College of Surgeons; member of the House of Delegates of the American Medical Association; consultant at the Marcy (N. Y.) State Hospital; on the staff of the Faxton Hospital; died in Constableville June 28, aged 78, of chest injuries received in an automobile accident

Henry Clifford Sauls ⊕ Atlanta, Ga ; born in Marietta, Ga., Feb. 28, 1887; Atlanta College of Physicians and Surgeons, 1913; associate professor of clinical medicine at the Emory University School of Medicine; specialist certified by the American Board of Internal Medicine; fellow of the American College of Physicians; past president of the Fulton County Medical Society; served during World War I; on the staffs of Scottish Rite Hospital for Crippled Children, Decatur, Grady Hospital, and the Piedmont Hospital, where he died July 15, aged 60, of cerebral hemorrhage

Samuel Feldman, New York; born 1877; Cornell University Medical College, New York, 1904; specialist certified by the American Board of Dermatology and Syphilology; member of the American Academy of Dermatology and Syphilology and the New York Academy of Medicine; past president of the Bronx Dermatological Society; formerly on the faculty at Fordham University School of Medicine; affiliated with Morrisania City, Bronx and Lebanon hospitals and the Home and Hospital of the Daughters of Jacob; died in Lake Mohegan, July 27, aged 69, of acute coronary occlusion.

Harold Foster Dunlap ⊕ Indianapolis; Indiana University School of Medicine, Indianapolis, 1920; specialist certified by the American Board of Internal Medicine; fellow of the American College of Physicians; associate in medicine at his alma mater; at one time affiliated with the Mayo Foundation in Rochester, Minn.; since 1935 consulting internist at the Florence Crittenton Home; on the staffs of St. Vincent's Hospital, Indianapolis City Hospital and Methodist Episcopal Hospital, where he died July 22, aged 51, of cerebral hemorrhage and cardiovascular disease.

Claude Bernard Bowyer ⊕ Stonega, Va.; Medical College of Virginia, Richmond, 1906; past president of the Medical Society of Virginia and the state health department; trustee of the Emory and Henry College in Emory, Medical College of Virginia in Richmond and the Johnston Memorial Hospital in Abingdon; chief surgeon at the Interstate Railroad and Stonega Coke and Coal Company; died suddenly, July 29, aged 66.

George Hiram Bradley, Cincinnati; Miami Medical College, Cincinnati, 1909; for many years in charge of the post-office first aid unit; died July 30, aged 77, of uremia and arteriosclerosis.

William Harvey Bruce, Pennington Gap, Va.; University of Louisville (Ky.) Medical Department, 1912; member of the American Medical Association; died in Norton, July 28, aged 58.

Frank E. Bunting, Mandan, N. D.; Detroit College of Medicine, 1888; served as county health officer; on the staff of the Mandan Deaconess Hospital; died July 18, aged 83, of coronary occlusion.

William M. Byne, Griffin, Ga.; Louisville (Ky.) Medical College, 1891; died May 8, aged 78, of diabetes mellitus.

Donald Brett Cragin ⊕ Hartford, Conn.; Harvard Medical School, Boston, 1902; fellow of the American College of Surgeons; served as president and vice president of the Association of Life Insurance Medical Directors; past president of the local board of health; for many years medical director of the Aetna Life Insurance Company; a captain in the medical corps of the U. S. Army during World War I; consulting surgeon for the Hartford Hospital; trustee at the Hartford Dispensary; died July 13, aged 71.

James Slater Crawford ⊕ Pittsburgh; Western Pennsylvania Medical College, Pittsburgh, 1899; served during World War I; lieutenant colonel, medical reserve corps, not on active duty, and medical examiner for a draft board during World War II; formerly chief of the South Side Hospital; died July 12, aged 71, of coronary thrombosis.

John Henry Evans ⊕ Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1908; fellow of the American College of Surgeons; served during World War I; affiliated with the Oak Park (Ill.) Hospital and the Franklin Boulevard Hospital; died in River Forest, Ill., July 14, aged 61, of coronary thrombosis.

Robert Galen Davis, Baltimore; College of Physicians and Surgeons, Baltimore, 1882; died in West Baltimore Hospital July 19, aged 88, of a hip fracture received in a fall.

William Thomas Dean, St. Louis; St. Louis University School of Medicine, 1912; died July 6, aged 60, of coronary thrombosis.

William Lorne Deeton, Cleveland; University of Toronto Faculty of Medicine, Toronto, Canada, 1926; member of the American Medical Association and the American Academy of Ophthalmology and Otolaryngology; specialist certified by the American Board of Otolaryngology; served as captain in the Ohio State National Guard; on the staffs of Woman's Hospital and Cleveland Clinic; died July 28, aged 47, following a fall.

Margaret Jean Delmore, Uniontown, Pa.; Woman's Medical College of Pennsylvania, Philadelphia, 1899; died July 11, aged 72, of chronic nephritis, uremia and generalized arteriosclerosis.

Walter Martin Dickerson, Armstrong, Mo.; St. Louis College of Physicians and Surgeons, 1897; died in the Lee Hospital, Fayette, July 14, aged 72, of coronary occlusion.

Emil J. Doll, Louisville, Ky.; Hospital College of Medicine, Louisville, 1904; died in St. Anthony's Hospital July 7, aged 67, of strangulated hernia.

Herman August Drechsler, St. Paul; University of Minnesota College of Medicine and Surgery, Minneapolis, 1902; past president of the Ramsey County Surgical Society; for many years medical director of the Samaritan Hospital and on the staffs of West Side General and St. Paul hospitals; died in St. Barnabas Hospital, Minneapolis, June 15, aged 70, of heart disease.

Leland Creason Edmonds ⊕ Horton, Kan.; St. Louis University School of Medicine, 1926; served as president of the Horton High School Board; affiliated with the Horton Hospital; died July 9, aged 45, of cerebral hemorrhage.

William Young Finch ⊕ Manhasset, N. Y.; College of Physicians and Surgeons, medical department of Columbia College, New York, 1894; veteran of the Spanish-American War; died June 29, aged 75, of cerebral thrombosis, arteriosclerosis and hypertrophy of the prostate.

Carroll Harold Fowlkes ⊕ Richmond, Va.; Medical College of Virginia, Richmond, 1910; served during World War I; affiliated with the Johnston-Willis Hospital; died in Columbia July 5, aged 59, of coronary thrombosis.

John Walter Fulwiler, Bloomington, Ill.; Rush Medical College, Chicago, 1896; served three terms as county physician; local examiner for many life insurance companies, including the Prudential, which awarded him a diamond medal for thirty years' service; local surgeon for the Illinois Central Railroad; on the first staff and for many years a member at the Brokaw Hospital, Normal, where he died July 16, aged 80, of carcinoma of the prostate.

Harry Charles Galey, Key West, Fla.; University of Pennsylvania School of Medicine, Philadelphia, 1915; member of the American Medical Association; served as mayor and health officer of Key West; formerly affiliated with the U. S. Public Health Service; died July 30, aged 61, of coronary thrombosis.

John Frederick Gernhardt, Los Angeles; Fort Worth School of Medicine, Medical Department of Texas Christian University, Fort Worth, 1916; medical director and owner of the Los Angeles Sanitarium; died in the White Memorial Hospital July 14, aged 69, of diabetes mellitus.

George Lewis Gibbs, Sun Prairie, Wis.; the Hahnemann Medical College and Hospital, Chicago, 1890; died July 17, aged 80, of cerebral hemorrhage.

Arthur Howard Gollmar, Manteno, Ill.; Rush Medical College, Chicago, 1900; member of the American Medical Association; affiliated with the Manteno State Hospital; died July 24, aged 74, of coronary thrombosis.

George Munro Goodwin ⊕ New York; Columbia University College of Physicians and Surgeons, New York, 1911; specialist certified by the American Board of Internal Medicine; fellow of the American College of Physicians; affiliated with the New York Orthopaedic Dispensary and Hospital and St. Luke's Hospital, where he died July 12, aged 59, of dissecting aneurysm of the abdominal aorta.

Vivian Verne Grant, Oklahoma City; University Medical College of Kansas City, Mo., 1907; served during World War I; affiliated with Capitol Hill General Hospital; died in Providence Hospital, Waco, Texas, July 31, aged 65, of myocardial infarction.

Eugene R. Gravelly, Batesville, Ark.; Meharry Medical College, Nashville, Tenn., 1908; at one time a missionary in Africa; died July 4, aged 74.

Charles Taylor Graves, Monongahela, Pa.; University of Pennsylvania Department of Medicine, Philadelphia, 1895; served as member and president of the school board; on the staff of the Monongahela Hospital; died in St. Petersburg, Fla., July 4, aged 76, of coronary thrombosis.

James Millard Graybeal, Marion, Va.; University of Tennessee Medical Department, Nashville, 1901; on the staff of the Lee Memorial Hospital; died July 6, aged 70, of carcinoma of the prostate and pelvic bones.

Elbert Paul Green, Birmingham, Ala.; Birmingham Medical College, 1911; served during World War I, member of the American Medical Association; on the staffs of Baptist and Jefferson hospitals; died in the Veterans Hospital, Tuscaloosa, July 10, aged 66, of cerebral hemorrhage and arteriosclerosis.

Edward Walter Griffin, Townsend, Tenn.; University of Georgia Medical Department, Augusta, 1900; served during World War I; major, medical reserve corps, not on active duty; member of the American Medical Association; died in Cartersville, Ga., July 3, aged 74, of injuries received in an automobile accident.

John Jacob Gurtov ⊕ New York; Yale University School of Medicine, New Haven, Conn., 1910; specialist certified by the American Board of Otolaryngology; fellow of the American Academy of Ophthalmology and Otolaryngology; for many years on the staff of the Manhattan Eye, Ear and Throat Hospital; died July 28, aged 67, of uremia and acute pyelonephritis.

Benjamin Sargent Hanna, Norfolk, Va.; College of Physicians and Surgeons, Baltimore, 1912; formerly affiliated with the U. S. Public Health Service; served during World War I; died July 14, aged 72, of arteriosclerosis and gastric ulcer.

Charles Wilson Harper, Chipley, Fla.; University of Georgia Medical Department, Augusta, 1914; died in Sea Grove Beach, July 16, aged 56.

Frank James Rohner, Iowa City; State University of Iowa College of Medicine, Iowa City, 1912; specialist certified by the American Board of Internal Medicine; member of the Central Society of Clincal Research and the American Medical Association; fellow of the American College of Surgeons; formerly on the faculty of his alma mater; on the staff of Mercy Hospital; died July 1, aged 64, of hypostatic pneumonia.

Edward Everett Rowell ⊕ Stamford, Conn.; Hahnemann Medical College and Hospital of Philadelphia, 1899; specialist certified by the American Board of Radiology, Inc.; member of the American Roentgen Ray Society and Radiological Society of North America, Inc.; fellow of the American College of Radiology; formerly health officer; served overseas during World War I; radiologist on the staffs of Greenwich (Conn.) Hospital, Norwalk (Conn.) General Hospital and St. Joseph's Hospital; died July 13, aged 68, of lymphosarcoma.

Alfred Schwab, New York; Columbia University College of Physicians and Surgeons, New York, 1896; Bellevue Hospital Medical College, New York, 1896; died July 13, aged 72, of diabetes mellitus.

Bryan Sharkey, Dayton, Ohio; Miami Medical College, Cincinnati, 1902; for many years practiced in Middletown, where he served as chairman of the board of health and on the staff of Middletown Hospital; died July 16, aged 74, of cerebral hemorrhage.

Russell Aber Shirrefs ⊕ Elizabeth, N. J.; Columbia University College of Physicians and Surgeons, New York, 1899; formerly county coroner; on the staffs of Elizabeth General and St. Elizabeth's hospitals; died July 15, aged 73, of carcinoma of the stomach.

James Ernest L. Spalding, Muncy, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1928; member of the American Medical Association; served as president of the local board of health; affiliated with the Muncy Valley Hospital; died July 17, aged 45, of coronary thrombosis.

Newton C. Speer ⊕ Kansas City, Kan.; Kansas City (Mo.) Medical College, 1900; at one time practiced in Osawatomie, Kan., where he was on the staff of the State Hospital and division surgeon for the Missouri Pacific Lines; later industrial surgeon and Kansas City, Mo., terminal surgeon; on the staffs of Bethany, St. Margaret's and Providence hospitals in Kansas City, Kan., and St. Vincent's Hospital in Kansas City, Mo.; killed near Peculiar, July 6, aged 71, when his automobile collided with a bus.

William August Steffen ⊕ Sheridan, Wyo.; Illinois Medical College, Chicago, 1904; served as president of the Wyoming State Medical Society and the state board of medical examiners; served during World War I; died July 12, aged 68, as the result of injuries received in a fall.

J. Carl Steiner ⊕ Quincy, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1907; on the staff of the Blessing Hospital, where he died July 9, aged 64, of heart disease.

Margaret Ann Hutchinson Sutley ⊕ Philadelphia; University of Colorado School of Medicine, Denver, 1918; fellow of the American College of Surgeons; on the staff of the Woman's Hospital; died July 17, aged 53, of carcinoma of the breast.

Stephen Dana Sutliff ⊕ Shippensburg, Pa.; College of Physicians and Surgeons, Baltimore, 1901; physician for the board of health; on the staffs of the Carlisle (Pa.) Hospital and the Chambersburg (Pa.) Hospital, where he died July 16, aged 69, of injuries received in an automobile accident.

William Jasper Sweeney, Liberty, Ky.; University of Louisville Medical Department, 1909; died July 7, aged 62, of Hodgkin's disease.

John Samuel Taylor, Richland, Wash.; University of Pennsylvania School of Medicine, Philadelphia, 1938; member of the American Medical Association and the Medical Association of Puerto Rico; on the staff of the Kadlec Hospital; drowned July 9, aged 34, while attempting to save another swimmer at Long Beach.

John Young Templeton ⊕ Mooresville, N. C.; Jefferson Medical College of Philadelphia, 1913; died July 15, aged 59, of coronary thrombosis.

Frank Edward Tull, Fontana, Calif.; Rush Medical College, Chicago, 1891; died July 16, aged 82, of cerebral hemorrhage.

KILLED IN ACTION

Stanley Joel Snitow, New York; Cornell University Medical College, New York, 1940; diplomate of the National Board of Medical Examiners; interned at the Mount Sinai and the New York hospitals; began active duty as a first lieutenant in the medical corps, Army of the United States, attached to the Air Corps, on Nov. 26, 1942; during his period of training in various stations in this country served as an aviation examiner; promoted to captain; in the early part of April 1944 left the United States for overseas duty as a flight surgeon; awarded posthumously the Purple Heart, the Congressional Medal of Honor and a citation from the late President Roosevelt; killed in the North African area April 20, 1944, aged 27, when the ship on which he was being transported was torpedoed by the Germans during an aerial attack.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Sept. 13, 1947.

State Medicine in Practice

Sir Ernest Graham-Little, dermatologist, member of Parliament and well known as a writer on medical politics, shows in the *Daily Telegraph* the results of a state medical service in New Zealand, where it was instituted by the labor government and has been in operation for ten years. Since the war the system has been fully reviewed in the House of Representatives, and almost universal dissatisfaction with it has been expressed. The complaint was made that it is a common practice for physicians operating the health services to undertake treatment of an impossible number of patients and to push them through at the rate of 1 every five minutes. If the diagnosis is not conclusive the patients are sent to the public hospitals, which are consequently filled with trivial cases, crowding out serious cases. The prime minister, who had a large part in founding the scheme, was so shaken by the evidence that he said: "If patients are being treated like sheep passing through a dip, without proper overhaul, the matter should be investigated." In a subsequent debate the minister of health admitted that the abuses of the system were such that the government must seriously consider altering it.

Other criticisms have been made. For instance it is contended that while state doctors draw extravagant incomes from the social security fund, it is extremely difficult to secure any medical attention outside business hours or during the week end. There is said to be a definite falling off in the standard of medical practice, from both the ethical and the clinical points of view. The absence of incentive to undertake the prolonged training to qualify for the status of specialist has resulted in a serious dearth of skilled physicians and surgeons and consequent discouragement of both medical research and postgraduate study.

The cost of the security benefits has mounted sharply. During the year ending March 1 it was $139,000,000 against $83,000,000 for the previous year. The drug bill increased from $2,250,000 in 1943 to $5,700,000 in 1947 and the medical benefits from $4,000,000 to $7,000,000 in the same period.

The Healthiest Year Known

During the war it was frequently noted that the vital statistics showed an improvement on those of peacetime. The Registrar-General's statistical review for England and Wales, which has just been published, shows that 1945 was the healthiest year ever known. It also discloses that the majority of civilian war deaths in that year were caused by rockets and to a limited extent by a new series of flying bomb attacks launched from bases in the Netherlands. The total number of deaths was 488,108, giving a crude death rate of 12.6 per thousand civilian population—lower than the rates of 12.7 and 13 for the two previous years, but 1 above the rate for 1938. But the comparative mortality index, which allows for the changing sex and age structure of the population and expresses the mortality of each year as a ratio to that of 1938, was only 0.893, which makes 1945 the healthiest year on record. The infant mortality rate, after reaching a new low record of 45.44 per thousand live births in 1944, rose very slightly to 46 in 1945 but maintained the improvement shown during the war. Maternal mortality (excluding abortion) continued to diminish steadily, reaching 1.52 per thousand births in 1944 and 1.47 in 1945. As a result of the immunization campaign only 694 deaths were attributed to diphtheria in 1945, and the death rate for children under 15 years of age reached a new low level of 57 per million.

The Result of the Trials of Streptomycin

The Ministry of Health announces that the preliminary results of the trials of streptomycin in this country encourage the view that, as available supplies of the drug permit, patients suffering from tuberculous meningitis or miliary tuberculosis should be given the opportunity of receiving treatment with the drug. While streptomycin is the best drug available for the treatment of these conditions, it prolongs life and relieves symptoms in only a proportion of cases. It is too early to say whether it ever produces a permanent cure.

The production of streptomycin in this country is still limited, but additional supplies obtained from the United States have enabled arrangements to be made for a certain number of medical schools to receive an allocation each month for use in teaching and associated hospitals. The number of beds for which supplies are available is about one hundred and fifty. The cost of streptomycin is still extremely high, and for the time the supplies are being distributed by the government to the medical schools free of charge. In view of the limited experience with streptomycin in the treatment of other conditions, the medical schools have been asked for the present to restrict use of the drug to cases of tuberculous meningitis and miliary tuberculosis. It is not recommended for use in chronic pulmonary tuberculosis.

Control of the Sale and Use of Penicillin and Streptomycin

A bill to control the sale and use of penicillin and other substances has passed through the House of Commons. The minister of health, Mr. Bevan, explained the dangers of unrestricted sale. Penicillin taken over a long period in small quantities establishes in the organism a resistance to its beneficial effects. It is highly undesirable that this valuable substance should become the plaything of quacks, sold as penicillin lipstick, penicillin rouge and penicillin powder. The bill laid down that penicillin could be given only on the certificate of a qualified medical practitioner or veterinary surgeon.

The bill also took power to deal with other drugs where control might later be found necessary. One called streptomycin had given Mr. Bevan considerable trouble. Great expectations had been carelessly aroused about it, but the Ministry of Health knew that this drug had caused definite harm. In other instances, although a healing effect had been claimed, that had not been established. Investigations were proceeding, which, if they proved successful, would transform the whole field of medicine, but the government was anxious that when these were perfected it would have power to prevent their thoughtless consumption and commercial exploitation in an injurious manner. Therefore the bill controls these substances.

Institute of Animal Physiology to Be Set Up

The Agricultural Research Council has decided, after a careful review, that in many directions progress toward the improvement of animal health and production is restricted by lack of knowledge of the fundamental physiology of farm animals. To fill in some of the gaps in knowledge a new Institute of Animal Physiology is needed, and the Ministry of Agriculture has decided to establish this. The director will be Professor I. de Burgh Daly, who is professor of physiology in Edinburgh University. It is hoped that he will take office early in 1948. The council proposes to appoint as his senior colleagues two scientific workers of high distinction in biochemistry and pathology.

Dr. S. H. Daukes an Organizer of Museums

The death at the age of 68 of Dr. S. H. Daukes has removed a great organizer of museums. He served with distinction in World War I as divisional sanitary officer. His interest in museums and graphic methods of medical education began when he was appointed to organize the War Office School of Military Hygiene. He contributed the chapter on Hygiene to the official Medical History of the War. The late Sir Andrew Balfour, director of the Wellcome Research Institute, was so struck with his work on public health that he invited Daukes to take charge of the Wellcome Museum of Medical Science. In 1923 Daukes advocated the institution of a museum of wider scope to illustrate the latest knowledge concerning diseases and hygiene and to show the steps by which this knowledge had been reached. His plan was warmly approved by Sir Henry Wellcome, and in 1926 the Wellcome Museum of Medical Science was opened with Daukes as its first director. Under his direction the museum played an important part in organizing exhibitions at home and abroad. It set new standards in visual education and increased the prestige of British medical science. He displayed his wide knowledge and enthusiasm for the modern museum as an educational method in his monograph, "The Medical Museum" (1929). In addition to these activities he distinguished himself in general literature. He was a successful novelist, and one of his books, "The Doctor's Defence," was a best seller. Others were "A Cuckoo in Harley Street" and "He Loved Freedom." In the last, which was published a few days before his death, he dealt with the reactions of the physician to state medicine: "He sits at a big desk surrounded by Government forms and little rubber stamps."

BERLIN

(From Our Regular Correspondent)

Sept. 20, 1947.

Medical Education in Germany

The universities are greatly hampered in their activities by the destruction of many of their buildings, institutes, clinics and laboratories. As compared with twenty-three universities in 1932, there are twenty-two now. The universities of Breslau and Königsberg (both cities under Polish administration) have ceased to operate, while the French have opened a new university at Mainz, and plans are under way for another one in the Saar. Except for Giessen, all universities have medical faculties.

The biggest shortage is in textbooks; most public and private libraries and many bookstores have been destroyed by acts of warfare, and new textbooks have not yet been published. Textbooks are often of a generation ago, and even these are scarce.

Another great difficulty is housing. Mainz University has introduced the American type of campus life (dormitories and boarding). All other universities are lacking such facilities, which are contrary to the old German students' tradition.

The field of university studies which most students desire to take up is medicine, especially so in the American and Russian zones of occupation. At present, many universities do not admit first year medical students.

The number of registered medical students in the four zones is as follows: American, 10,714; British, 6,430; French, 2,887, and Russion, 3,336 plus an unknown number from Rostock and Greifswald which do not give official figures.

The social structure of the student body has changed, particularly in the Russian zone. Almost all universities have introduced a numerus clausus, a novel feature in Germany where universities have always been state-owned and open to all who could meet scholastic requirements. Now, more students are refused than admitted; but the highest percentage of refusals occurs in the Russian zone, where a strong tendency prevails to increase the number of students who come from the working class. Thus, 24 per cent of the students at the Russian-controlled Berlin University were admitted without having graduated from "Gymnas-ium," the German equivalent of high-school plus precollege education. As yet, however, less than 10 per cent of the members of the student body are sons and daughters of workers. Not much change in the social structure of the student body has occurred in the Western zones, except for the general lowering of the standard of living.

The percentage of women students is higher in the Russian zone than in Western Germany. In Berlin, for example, women constitute 40 per cent of the total, with an absolute majority at the Medical and Philosophical Faculties. In 1932 only one fourth of the students were women.

The location of the universities presently in operation in the four zones of Germany is as follows:

American	British	French	Russian
Erlangen	Bonn	Freiburg	Berlin
Frankfurt	Göttingen	Mainz	Greifswald
Heidelberg	Hamburg	Tübingen	Halle
Munich	Kiel		Jena
Marburg	Cologne		Leipzig
Würzburg	Münster		Rostock
Giessen (no medical faculty)			

Medical Literature and the Study of Medicine in Germany Today

There is a great revival of medical periodical literature in Germany today, particularly when compared with the low level of economic life. All publishers need licenses by the information control divisions of military government. Such licenses have been issued in considerable numbers by the four occupying powers to medical publishers free from Nazi taint.

In the field of general medicine, the four best known weeklies are published again regularly:

Aerztliche Wochenschrift (Springer, Berlin and Heidelberg)
Klinische Wochenschrift (Springer)
Medizinische Klinik (Urban & Schwarzenberg, Berlin, Munich and Vienna)
Deutsche Medizinische Wochenschrift (Thieme, Stuttgart)

Other periodicals in the field of general medicine are:

Therapie der Gegenwart (Urban & Schwarzenberg)
Medizinische Monatsschrift (Wissenschaftliche Verlagsgesellschaft Stuttgart)
Aerztliche Forschung (Werkverlag Dr. Banaschewski, Bad Wörrishofen, Bavaria)
Medizinische Rundschau (own publishing house in Mainz, French zone)
Das deutsche Gesundheitswesen (published by the "German Central Administration of Public Health in the Soviet zone of occupation" and printed in Berlin through the "Cooperative of German Medical Publishing Houses").

In the various specialties the following periodicals are published:

Surgery:
  Der Chirurg (Springer, monthly)
  Zentralblatt für Chirurgie (Thieme, Leipzig)
  Zeitschrift für Orthopädie und ihre Grenzgebiete (Ferdinand Enke, Stuttgart)

Dermatology and Syphilis:
  Archiv für Dermatologie und Syphilis (Springer)
  Zeitschrift für Haut- und Geschlechtskrankheiten und deren Grenzgebiete (Berliner Medizinische Verlagsanstalt, biweekly)
  Dermatologische Wochenschrift (Barth, Leipzig, weekly)

[illegible] monthly)
[illegible] *[illegible]ervenheilkunde* (Springer)

Gynecology and Obstetrics:
  Zeitschrift für Geburtshulfe und Gynäkologie (Ferdinand Enke, Stuttgart)
  Zentralblatt für Gynäkologie (Thieme, Leipzig)

Anatomy, Physiology, Pathology, Biochemistry:
  Biochemische Zeitschrift (Springer)
  Virchow's Archiv für pathologische Anatomie und Physiologie und für klinische Medizin (Springer)
  Pflüger's Archiv für die gesamte Physiologie des Menschen und der Tiere (Springer)
  Naunyn-Schmiedebergs Archiv für experimentelle Pathologie und Pharmakologie (Springer)

Pediatrics:
  Archiv für Kinderheilkunde (Ferdinand Enke, Stuttgart)

[illegible]
  [illegible] *für Augenheilkunde und für Augenarztliche* [illegible] Enke, Stuttgart)

Tuberculosis:
  Der Tuberkuloseartzt (Thieme, Stuttgart)

Internal Medicine:
  Zeitschrift für die gesamte innere Medizin und ihre Grenzgebiete (Thieme, Leipzig)

Urology:
  Zeitschrift für Urologie (Thieme, Leipzig)

Radiology:
  Die Strahlentherapie (Urban & Schwarzenberg, Berlin)

Psychology:
  Psyche (Lambert Schneider, Heidelberg)

About twenty more formerly well known periodicals are scheduled to come out soon. Their publication has been delayed by the acute shortage of paper and by other technical difficulties.

OSLO

(From Our Regular Correspondent)

Sept. 8, 1947.

Troublesome Taxation

Of late the fiscal authorities seem to have turned a grudging and jaundiced eye on us doctors. For how otherwise can we explain two recent fiscal rebuffs. The first concerns taxation of motor cars. In 1917 a luxury tax was put on motor cars, but physicians could on application obtain relief from it. This concession was withdrawn in 1933, presumably because it had been abused. Time and again the Norwegian Medical Association sought relief from this tax for those of its members whose motor cars were used in their practices. In 1946 the fiscal authorities made this luxury tax heavier than ever, and again the physicians protested. To be sure, the fiscal authorities flirted for a moment with the idea of a concession to physicians, but the latest plan for taxation for the fiscal year 1947-1948 shows no sign of relenting on the part of the government. Our other grievance concerns a scheme for pensions for doctors who are not in the public health service. The Norwegian Medical Association has recently weighed the possibilities of a scheme of voluntary contributions to a pension fund, physicians to earn their pensions by annual contributions to be exempt from income tax. To which the fiscal authorities have, in effect, replied: Whatever sum above 300 kroners a year is paid into a pension fund is not to be exempt from taxation. And it is largely on account of this ruling that this proposed scheme hangs fire.

Norway's Unacknowledged Contributions to Medicine

When Norwegians travel abroad they often find to their dismay that their most distinguished compatriots are unknown or (what is still more galling) are supposed to be Swedes or Danes. It may be too late in the day to teach their foreign colleagues elementary geography and to disentangle Oslo, the capital of Norway, from the suburbs of Stockholm or Copenhagen. One of the nation's coming men, Professor Axel Ström, returned last year from a visit to the United States with the suggestion that Norwegian physicians could better hold their own in the international world of medicine if they systematically sent to all the most important libraries in the world copies of their original contributions to medicine, such as theses for the degree of M.D. This will cost a great deal. But it may also mean that credit will be given where credit is due and it may save their colleagues abroad from the invidious achievement of duplicating old discoveries hitherto overlooked.

The Future of Fat Children

What was the ultimate fate of the fat boy in "Pickwick Papers"? As Dickens assuredly drew him from life, it should have been possible to learn what became of him. At present not much is really known on this score, most research with regard to the prognosis for adiposity having dealt with persons over the age of 20. The omission is curious, for there must be thousands of anxious parents wanting to know whether their overweight offspring will continue to bulge unesthetically in adult life. Recently Dr. Per Hanssen has dealt with this problem in some detail in connection with 5 cases. Another Norwegian, Dr. Carsten Müller, has carried out a follow-up study of 20 overweight youngsters between the ages of 10 and 20 years and has found that they show a reassuring general tendency to regain normal dimensions on and after coming to years of discretion.

Centralized or Decentralized Libraries

In Oslo many of the medical journals subscribed to from public funds are scattered throughout various hospital departments, journals devoted to venereal disease, for example, being allocated to a dermatologic department, journals on surgery to a surgical department and so on. The severity or laxity with which these departments treat long-fingered would-be borrowers of medical literature reminds one of the tale of the possessor of a large library who, when asked how he dealt with books lost, stolen or strayed, confessed that all his books had been borrowed. The *Journal of the Norwegian Medical Association* has lately put forward a plea on behalf of the research workers who are obliged to go from one building to another in search of the books and journals they need. The solution proposed is, of course, centralization. In theory this solution is excellent. The full-time librarian is a much more effective custodian of reading matter than a score of part-time workers, each with his own system or lack of system in lending books. But in practice the change-over from the present state of affairs to complete centralization may prove rather difficult.

Professor Theodor Frölich

After a long and painful illness, Professor Theodor Frölich died August 14 at the age of 76. He was professor of pediatrics at the University of Oslo till he reached the age limit in 1940. The work which gave him an international reputation at the beginning of this century was carried out in conjunction with Professor Axel Holst, with whom he studied experimental scurvy in guinea pigs. Their first publication on this subject appeared in 1907 at a time when the knowledge of vitamins was infinitesimal. Indeed, the claim may safely be made that the investigations of Holst and Frölich constitute the most important foundation of present knowledge of vitamin C (ascorbic acid). Frölich was also a pioneer in the field of tuberculosis, and it was he who introduced the wholesale examination of school children in Norway with tuberculin. From 1928 to 1937 he was president of the Norwegian National Association Against Tuberculosis, and in 1930 he presided in Oslo over the Congress of the International Union Against Tuberculosis.

ITALY

(From Our Regular Correspondent)

Naples, July 31, 1947.

A "Rebellion" of Cancer Patients

Quite a stir has been caused during the last few months in connection with a new treatment for cancer. The new preparation, called FA 2 by its originator, is an extract of sheep's liver in high concentration, which produces fever and particularly affects the toxic-encephalic type of patient (in whom there is pronounced anxiety or transient psychosis). The product is claimed to have a sedative effect on pain and to cause a modification of the tumor, which after treatment tends to encroach less on the organ it affects and, according to some, diminishes in size.

The Psychotherapeutic Value

Long and imposing articles have appeared in the press and numerous medical authorities have been consulted for their opinions. The inventor of the preparation, a pharmaceutical chemist of Rome, heretofore not very well known here, has found himself much in the limelight.

The government has been inundated with thousands of letters requesting authorization to sell the drug in pharmacies. Following an investigation into the matter by a specially appointed commission, the Ministry of Health authorized the sale of the new medicament. In doing so the official government report published in the newspapers stated that the drug was none other than a hepatic extract of sheep's liver in high concentration; it was not a dangerous drug and its anodyne action had been determined to a certain extent, but it had no therapeutic effect on the course of the cancer. Many conferences and much planning of research followed this announcement by physicians. As soon as the patients and their families found that nothing prevented them from obtaining the preparation from the pharmacies, nobody wanted any, and a wave of skepticism has emerged during the last few weeks.

Correspondence

MINIMAL PATHOLOGY COMMITTEE

To the Editor:—In the face of recent statements in the press regarding unnecessary operations, it might be of interest to other hospitals, as well as to the members of the profession at large, to learn of what has come to be known at this hospital (Mary Immaculate Hospital) as the "minimal pathology committee."

This is a standing committee, appointed within the past year by the medical board and composed of five members representing the general surgical service, including gynecology, the urologic service and the department of pathology.

The purpose of this committee is to discourage the carrying out of operative procedures for which the indications are not sufficiently clear or the existing pathology adequate to justify them; in other words, to prevent unnecessary operations.

The committee examines all surgical specimens in which a minimal pathologic state is thought to exist and in addition reviews the corresponding charts for data concerning the need for the operative undertaking. If, after this has been done, the committee is not convinced of the justification for surgical intervention, it next decides to interview the surgeon concerned, whose name is then, for the first time, disclosed. In this way further information may be obtained of such a nature as to satisfy the committee, the case then being closed. If not, whatever action seems appropriate is carried out through the proper authorities, even if this means the curtailment or complete withdrawal of surgical privileges at the hospital.

The benefits derived from the activities of this committee are quite definite. In the first place it is obvious that with the knowledge on the part of the professional staff that such a committee exists, additional concern is bound to be felt by every surgeon, even the most conscientious, that the disease processes found in his patients and revealed in the specimens sent to the laboratory shall be adequate to justify his operative procedures. The staff member becomes still more "pathology conscious," weighs even more carefully the existing indications and is more than ever cautious about performing an operation which may later be adjudged to have been unnecessary. It is therefore apparent that if there are any on the staff who habitually exercise poor surgical judgment or, perhaps, demonstrate a dulled sense of what constitutes sound professional conduct, the means for the detection of such men and for weeding them out from the staff are to be found in the workings of this committee.

On the other hand, the favorably expressed judgment of the committee, after a thorough investigation of any doubtful case, might well prove of value, legally or otherwise, to the surgeon concerned, when, despite a conscientious approach, the pathologic condition found proved after all that the operation was unnecessary. Such, for instance, was the case of a nephrectomy for a supposed, though nonexistent, tumor of the kidney. Investigation of this case resulted in the approval by the committee of the action taken by the surgeon concerned, for it became obvious, on interview, that every effort had been made to reach a sound conclusion. The member of the committee representing urology willingly admitted that in view of the facts available, had the case been his, he would have felt compelled to carry out the same procedure.

An indirect benefit which may be looked for in connection with the functioning of a "minimal pathology committee" is increased attention to clinical records. Aware of the possibility of review in any borderline case, a surgeon will be more apt to include in the record every fact or observation which has a bearing on the need for surgical intervention.

Such a committee, then, functioning impersonally, may well act as a safeguard for the patient, minimizing as it will the possibility of his undergoing an unnecessary operation. It may be a safeguard for the surgeon as well, who in a doubtful case may, under certain circumstances, find the support of the committee a valuable asset. Finally it may serve as a safeguard for the interests of the hospital, with its primary concern for the care of its patients, for the caliber (ethical and professional) of the physician on its staff and for its own reputation in the community.

Frank N. Dealy, M.D.,
Mary Immaculate Hospital,
Jamaica, N. Y.

THE WORD "TOOL" IN MEDICAL WRITING

To the Editor:—Is it not important that something be done to discourage use of the word "tool" to describe a drug or other nonmechanical method for the treatment of human illness? The custom has grown so steadily that now no physician seems to consider his manuscript up-to-date if he does not use (or misuse) the word "tool" at least once in each article or in discussion.

And now the press has done it! In the Sept. 12, 1947 issue of the previously staid and correct *New York Times* the following sentence appeared on page 23: "An anesthetic called procaine, injected into the human blood stream to relieve the symptoms of certain diseases such as arthritis, which can be reached only by venous routes, was described yesterday at the final session of the Congress of Anesthetists in the Hotel McAlpin as a promising tool for medical use."

Is procaine a tool? Is it an implement, especially for manual use, as a hammer or saw, or a person or thing used as an agent or instrument as the "tool of a stronger nature," or an apparatus, device or utensil? Those seem to be the meaning of the word as found in the average dictionary. Funk and Wagnall's dictionary does state, however, that another use of the term is "both contrived and used for extending the force of an intelligent agent." Perhaps this definition justifies in some degree the growing present day use of the word, but I am inclined to doubt it. Physicians, anthropologists, psychologists and others of higher learning apparently think that a tool is anything which they want to so designate. The psychiatrist finds intravenous "sodium amytal" "a useful tool" in diagnosis and treatment, or considers hypnosis "a useful tool." If archaeologists or anthropologists meant a pick or shovel which they use for digging, one could understand their meaning readily; but they too find equally abstract methods or ideas "useful tools."

Harold J. Harris, M.D., New York.

URETHANE IN ANAPLASTIC CARCINOMA

To the Editor:—Following the report of the use of urethane in a patient with anaplastic carcinoma by Drs. M. J. Goodman and H. P. Lewis (J. A. M. A., Correspondence, **132**:1105 [Dec. 28] 1946) a justifiable opportunity for therapeutic trial of this material presented itself in a similar case. A man aged 34, who had served without medical incident throughout the North African, Sicilian and Italian campaigns and whose past history was otherwise noncontributory, was hospitalized for progressive anorexia with loss of weight and unremitting fever. A rectosigmoid peritoneal shelf was palpated, and examination after a barium enema revealed an apparently extrinsic constricting mass in this area. Because of the clinical diagnosis of carcinoma originating in the ailmentary tract with extensive peritoneal metastasis, a laparotomy was forgone. However, biopsy of a "nova" right supraclavicular gland showed infiltration by a distinctly anaplastic epithelium, which the pathologist could not reconcile with other than bronchiogenic origin on a probability basis even though roentgen examination showed the lung fields to be clear.

One gram of urethane in syrup of orange was administered three times a day for a period of three weeks, during which nutritional maintenance was attempted by parenteral amino acid and dextrose therapy. There was no apparent effect on the progression of the disease, and the dosage of urethane was discontinued ten days before the man's death, because of the retching it seemed to induce.

Necropsy revealed universal visceral lymphangial anaplastic carcinomatosis. The rectosigmoid shelf had merely been the palpable manifestation of a panserosclerosis. The porta hepatis had become converted into a solid, impatent cord. Still, no peritoneal transudate was present. The peribronchial and mediastinal lymphatics were everywhere involved as were both parietal and visceral pleuras. No primary site could be determined.

Histologically there was no evidence of tumor cell inhibition. In fact, comparison with the node excised before the inception of urethane therapy indicated, if anything, that after the course of urethane mitotic figures were even more plentiful.

Aside from the accidental similarity of the covert primary lesion, this case probably differs radically from that described by Drs. Goodman and Lewis; the disease was in a terminal state before the administration of urethane was started, and it is entirely possible that there was complete failure of absorption. It is nevertheless believed advisable to report the fact and circumstances of apparent unresponsiveness, so that progress with this new form of therapy may be properly adjudicated.

Robert D. Barnard, M.D., New York.

MODERN GERMAN PANEL PRACTICE

To the Editor:—With the continued agitation for state medicine it might be of interest to show how it works out elsewhere. The following account on panel practice is from a recent letter received from an eye physician in a large city in southern Germany in the American zone of occupation:

"Conditions regarding income from practice were still regular here till the beginning of this year. These have now become catastrophic through restrictions in the panel practice. In the first quarter of 1947 I treated 1,904 panel patients, for which I formerly received a flat rate of about 4 marks; therefore, about 8,000 marks. Now there is staggering in favor of the physicians with a smaller practice, especially the refugee physicians, which is as follows: For the first 500 cases I receive as heretofore 4 marks (2,000 marks); for the sixth, seventh, eighth and ninth hundreds I receive 3.60, 3.00, 2.50 and 0.90 marks (360, 300, 250 and 90 marks) and for the remaining 1,004 cases, 0.60 marks (602.40 marks). For all 1,904 cases, therefore, I receive 3,602.40 marks.

"My expenses during the quarter are a little over 3,000 marks, so that they almost equal the income from the panel practice. Under these circumstances I would have the greatest interest to reduce my panel practice two thirds to three fourths (so I would treat only 500 panel patients). I would then still earn 2,000 marks from my panel practice, but my expenses would be much lower, for I would be able to discharge one office worker, who receives 750 marks for the quarter. My net income from panel practice would then, when I treat only 500 panel patients, be relatively higher than when I treat three to four times as many. This will be astonishing to you, but it is a fact. But I am not allowed to curtail my panel practice arbitrarily, for according to the edicts about settlement, which have just been revised, I am entitled and *obliged* to treat private and panel patients. I am really not permitted to turn down panel patients. So done in the year 1947. Do they call that democracy in America? Now I have, thank God, a rather large private practice on the side, which covers the deficit and allows my subsistence."

Hans Schroeder, M.D., San Francisco.

Medical Motion Pictures

FILM REVIEWS

Gelatin Sponge ("Gelfoam") for Control of Hemorrhage. 16 mm., color, silent, 1,300 feet (1 reel), showing time forty-seven minutes. Produced by Hilger Perry Jenkins, M.D.; Robert W. Jampolis, M.D.; Edward Senz, M.D.; Howard Owen, M.D.; Rudolph Janda, M.D., and James Clarke, M.D., Department of Surgery, University of Chicago School of Medicine. Procurable on loan from Hilger Perry Jenkins, M.D., 826 East Sixty-First Street, Woodlawn Clinic Building, Chicago.

This motion picture presents an experimental study in dogs on the use of absorbable gelatin sponge ("gelfoam") for the control of hemorrhage. It covers a description of the character of the material; demonstrations of the technic of its application to various types of wounds in animals; gross and microscopic illustrations of what becomes of the sponge and its effect on the subjacent tissues of animals.

The film is a well balanced presentation of the experimental use of gelatin sponge in that the existence of the competing materials, fibrin foam and oxidized cellulose, is mentioned at the beginning and that its limitations are emphasized at the end. Another important point, that the "know-how" in technic must be gained by actual experience, is also adequately stressed. The demonstrations of the blanket technic for the liver; the patch technic for stab wounds of the vena cava and the heart, and the cuff technic for the aorta are exceptionally clear. The illustrations of the adherent clotting mechanism involved are also well done. Some of the photomicrographs of tissue sections are hazy and will be less readily understood by those not having special training in micropathology. Part of this might have been obviated by more detailed explanation of the tissue changes, and the use of markers to indicate the exact area under illustration. One other defect in the film lies in the lack of more adequate explanation for the failures that occurred in the series of animals studied. The photomicrographs are rather poor; otherwise the photography is good.

This motion picture should be of primary interest to general surgeons interested in a method for the control of hemorrhage that cannot be managed by ligatures and sutures and to specialists in vascular surgery, in which the gelatin sponge may serve as an adjunct to the use of other materials. Fourth year medical students, hospital interns and residents that have had at least some first hand observation of surgical technic may also find the film instructive.

To Hear Again. 16 mm., black and white, sound, 1,300 feet (1 reel), showing time thirty-seven minutes. Produced in 1947 by the Medical Department, U. S. Army. Procurable on loan from Office of the Surgeon General, U. S. Army, Pentagon Building, Washington, D. C. Attention: Chief of the Division of Education and Training.

This film shows a series of episodes in an Army Rehabilitation Center which illustrate some general principles in the rehabilitation of men and women with impaired hearing.

The portrayal is vivid and convincing; not a single unrealistic detail intrudes. There is a portrayal of the diagnostic procedure for distinguishing psychogenic from organic impairment, of the selection of hearing aids for those requiring them, of the teaching of lip reading, of the correction of speech difficulties and even of the psychotherapy used in a patient with hysterical deafness. The last-named episode is an outstanding performance showing how scientific accuracy can be combined with artistic quality.

If the film has a weakness, it lies in the inadequate suggestion of what constitutes a satisfactory adjustment to civilian life. Considerable attention is given at the end of the film to a dance at which soldiers who wear hearing aids are enjoying the performance of a swing band. It arouses the hope that something more useful is in prospect for these men. The film should be interesting to everyone connected with rehabilitation problems; to students in medicine, nursing, speech and psychology who may require a review of the general problem of audiometry and hearing aids, and to groups working with patients who present difficulties in hearing and speech. The photography, narration and general over-all treatment are excellent.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

NATIONAL BOARD OF MEDICAL EXAMINERS EXAMINING BOARDS IN SPECIALTIES

Examinations of the National Board of Medical Examiners and the Examining Boards in Specialties were published in The Journal, Oct. 11, page 376.

BOARDS OF MEDICAL EXAMINERS

Alabama: *Examination.* Montgomery, June 22-24, 1948. Sec., Dr. D. G. Gill, 519 Dexter Ave., Montgomery 4.

Arkansas:* *Examination.* Texarkana, Nov. 6-7, 1947. Sec., L. J. Kosminsky. Texarkana. *Eclectic.* Little Rock, Nov. 6. Sec., Dr. Clarence H. Young, 1415 Main St., Little Rock.

California: *Written.* Sacramento, Oct. 20-23. *Oral.* Los Angeles, Nov. 8-9. Sec., Dr. Frederick N. Scatena, 1020 N St., Sacramento 14.

Colorado:* Denver, Jan. 6-9. Final date for filing application is Dec. 20. Sec., Dr. J. B. Davis, 831 Republic Bldg., Denver 2.

Connecticut:* *Examination.* Hartford, Nov. 11-12. Sec., Dr. Creighton Barker, 258 Church St., New Haven.

Delaware: *Examination.* Dover, Jan. 13-15. *Endorsement.* Dover, Jan. 20. Sec., Dr. J. S. McDaniel, 229 S. State St., Dover.

District of Columbia:* *Examination.* Washington, Nov. 10-11. Sec., Commission on Licensure, Dr. G. C. Ruhland, 6012 Municipal Bldg., Washington.

Florida:* *Examination.* Jacksonville, Nov. 25-26. Sec., Dr. Harold D. Van Schaick, 6675 Windsor Lane, La Gorce Island, Miami.

Hawaii: *Examination.* Honolulu, Jan. 12-15, 1948. Sec., Dr. S. E. Doolittle, 881 S. Hotel St., Honolulu, T. H.

Idaho: Boise, Jan. 13-15. Sec., Miss Estella S. Mulliner, 355 State Capitol Bldg., Boise.

Indiana: *Examination.* Indianapolis, June 1948. Sec., Board of Medical Registration and Examination, Dr. Paul R. Tindall, K of P Bldg., Indianapolis.

Kansas: Topeka, Dec. 3-4. Sec., Board of Medical Registration and Examination, Dr. J F. Hassig, 905 N. 7th St., Kansas City.

Maine: Portland, Nov. 12-13. Sec., Dr. A. P. Leighton, 192 State Street, Portland.

Maryland: *Medical Examination.* Baltimore, Dec. 9-12. Sec., Dr. Lewis P. Gundry, 1215 Cathedral St., Baltimore. *Homeopathic Examination.* Baltimore, Dec. 9-10. Sec., Dr. J. A. Evans, 612 W. 40th St., Baltimore.

Massachusetts: *Examination.* Boston, Nov. 18-21. Sec., Dr. H. Q. Gallupe, 413-E State House, Boston.

Michigan:* *Examination.* Lansing, Nov. 19-21. Sec., Board of Registration in Medicine, Dr. J. E. McIntyre, 100 W. Allegan St., Lansing 8.

Minnesota:* Minneapolis, Oct. 21-23. Sec., Dr. J. F. DuBois, 230 Lowry Medical Arts Bldg., St. Paul 2.

Mississippi: *Endorsement.* Jackson, Dec. 1947. Asst. Sec., State Board of Health, Dr. R. N. Whitfield, Jackson.

Missouri: *Examination.* St. Louis, Oct. 20-22. Exec. Sec., Mr. John A. Hailey, State Capitol Bldg., Jefferson City.

Nebraska:* *Examination.* Omaha, Dec. Dir., Bureau of Examining Boards, Mr. Oscar F. Humble, 1009 State Capitol Bldg., Lincoln.

Nevada: Carson City, Nov. 3. Sec., Dr. G. H. Ross, 215 N. Carson St., Carson City.

New Hampshire: *Examination.* Concord, March 11-12. Sec., Board of Registration in Medicine, Dr. John S. Wheeler, 107 State House, Concord.

New Jersey: *Examination.* Trenton, Oct. 21-22. Sec., Dr. E. S. Hallinger, 28 W. State St., Trenton.

New York: *Examination.* Albany, Buffalo, New York, Syracuse, Feb. 16-19. Sec., Dr. J. L. Lochner, Jr., Education Bldg., Albany.

North Carolina: *Endorsement.* Raleigh, Oct. 20. Act. Sec., Mrs. L. J. McNeill, 226 Hillsboro St., Raleigh.

North Dakota: Grand Forks, Jan. 6-9. Sec., Dr. G. M. Williamson, 4½ S. Third St., Grand Forks.

Ohio: *Examination.* Columbus, Dec. 2-4. *Endorsement.* Columbus, Oct. 14. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus.

Oklahoma:* *Endorsement.* Oklahoma City, Oct. 28-29. Sec., Dr. F. Clinton Gallaher, 813 Braniff Bldg., Oklahoma City.

Pennsylvania: *Examination.* Harrisburg, Jan. 1948. Acting Sec., Board of Medical Education and Licensure, Mrs. M. G. Steiner, 351 Education Bldg., Harrisburg.

South Carolina: Columbia, Nov. 10-12. Sec., Dr. N. B. Heyward, 1329 Blanding St., Columbia.

South Dakota:* Pierre, Jan. 20. Sec., State Board of Health, Dr. Gilbert Cottam, Capitol Bldg., Pierre.

Texas: San Antonio, Nov. 12-14, 1947. Sec., Dr. T. J. Crowe, 918-20 Texas Bank Bldg., Dallas 2.

Utah: *Reciprocity.* Oct. 8. *Examination.* Salt Lake City, June, 1948. Asst. Dir., Department of Registration, Miss Rena B. Loomis, 324 State Capitol Bldg., Salt Lake City.

Virginia: Richmond, Dec. 4-6. Sec., Dr. K. D. Graves, 30½ Franklin Rd., Roanoke.

Wyoming: *Examination.* Cheyenne, Feb. 2. Sec., Dr. G. M. Anderson, Capitol Bldg., Cheyenne.

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* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Arizona: Dec. 16. Sec., Mr. Francis A. Roy, Science Hall, University of Arizona, Tucson.

Colorado: *Examination.* Denver, Dec. 17-18. Sec., Dr. Esther B. Starks, 1459 Ogden St., Denver.

District of Columbia: *Examination.* Washington, Oct. 20-21. Sec., Commission on Licensure, Dr. G. C. Ruhland, 6012 E. Municipal Bldg., Washington.

Iowa: Des Moines, Jan. 13, April 13, July 13, Oct. 12. Sec., Dr. Ben H. Peterson, Coe College, Cedar Rapids.

Michigan: *Examination.* Ann Arbor and Detroit, Jan. 9-10. Sec., Miss Eloise LeBeau, 101 N. Walnut St., Lansing.

New Mexico: *Examination.* Santa Fe, Nov. 2. Sec., Miss Marion M. Rhea, 114 E. Marcy, Santa Fe.

Oklahoma: Spring 1948. Sec., Dr. Frank Clinton Gallaher, 813 Braniff Bldg., Oklahoma City.

Oregon: *Examination.* Portland, Dec. 6. Admin., Mr. C. D. Byrne, Univ. of Oregon, Eugene.

South Dakota: Aberdeen, Dec. 5-6. Sec., Dr. G. M. Evans, Yankton.

Wisconsin: *Examination.* Milwaukee, Dec. 6. Sec., Prof. W. H. Barber, Scott and Watson Sts., Ripon.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Hospitalization Insurance: Failure to Report Operation in Application.—The plaintiff sued for hospital charges and additional miscellaneous benefits under a hospitalization policy issued originally by National Hospital Service Society, Inc., and subsequently assumed by the defendant corporation. From a judgment in favor of the defendant, the plaintiff appealed to the Municipal Court of Appeals for the District of Columbia.

The only issue before the trial court was whether the plaintiff's recovery was barred by her admitted failure to answer correctly certain questions in her application for insurance regarding a previous operation. On such application, which plaintiff filed in April 1941, she was asked whether she had had "medical or surgical treatment or advice in the past ten years." She answered yes and stated that she had had a kidney stone operation in January 1938 and influenza in February 1941. She gave the names of the physicians attending her on those occasions and also gave the name of her family physician. In answer to a further question as to whether she had had any "illness, injury or disability not mentioned previously" she answered "Yes, children's diseases." During her hospitalization in 1945, on which this suit is based, the plaintiff was operated on by Dr. Putski. According to his report he performed, among other procedures, a cauterization of the cervix. In a report which he furnished to the defendant, Dr. Putski, in answer to a question, stated that he had also performed a cauterization of the cervix on the plaintiff in 1939 to cure an ulcerated condition. The defendant rejected the plaintiff's claim for hospitalization benefits for the reason that in her application she had not reported the 1939 cauterization of the cervix.

The only testimony was that of the plaintiff herself and of Dr. Putski. The plaintiff stated that she had not in her application listed Dr. Putski as a physician who had treated her because she "simply did not think of it," that she did not purposely leave out his name, and that she had been referred to Dr. Putski by Dr. Foster, whom she had listed on the application as her family physician. She also testified that the operation in 1939 had been a minor one, that she had had no trouble at all until 1945, and that when she filled out the application in 1941 she was feeling fine; she was in good health until 1945. Dr. Putski testified that his examination in 1939 showed that the plaintiff had an "ulcerative endocervicitis" about the size of a 10 cent piece; he cauterized the cervix under general anesthesia, and the patient had made an uneventful recovery. She was hospitalized in 1945 primarily for the removal of a fibroid of the uterus, a tumor; Dr. Putski said that he also removed her appendix and performed certain other operations as a matter of routine and that he always performs a cauterization of the cervix in connection with such an operative procedure. In his opinion there was no connection between the cauterization of the cervix in 1939 and any of the operations he performed in 1945. On cross-examination the physician testified that a cauterization of the cervix is a minor operation, which he often performs in his office; that in most cases once the cervix is cauterized there is no further trouble, but that in some cases the trouble recurs; that there is nothing serious about a cauterization of the cervix in a normal case, nor is it unusual for a woman to have such an operation more than once.

The court said that to avoid the policy under existing statutes, statements in the application must be both false and made with intent to deceive or material to the risk of its acceptance. Whether a statement is false, made with deceitful intent or material in the statutory sense may be questions of law or of fact depending on the circumstances. It is obvious that a sickness or operation not material under a life insurance policy might be material under a hospitalization policy. In the former case the issue would be whether life was shortened, whereas in the latter the issue would be whether hospitalization would more likely be required. Tested by these principles, said the court, we have concluded that, while we might have found as a fact that the failure to report the 1939 operation was not due to an actual intent to deceive and neither materially affected the acceptance of the risk nor the hazard assumed, yet there was sufficient evidence to justify the trial judge in arriving at the opposite result. Reasonable men might conclude that a person would not forget an operation performed only two years before applying for insurance, particularly when the operation was performed at a hospital under general anesthesia. It is true that the plaintiff reported the kidney stone operation and the attack of influenza, but the trial court could have concluded that she did not want to report too many illnesses for fear the policy would not be written. The physician testified that, in the majority of cases, once the cervix is cauterized there should be no further trouble, but he also testified that in some cases the trouble recurs and that it is not unusual for a female to undergo such an operation more than once. He testified that he cauterized the cervix in 1945 only as a matter of routine, but the fact remains that it was a repeat operation. He testified that he often performed such operations in his office, yet the fact remains that he performed the 1939 one in a hospital. He testified that he considered the 1939 operation only a minor one, yet even a minor operation performed in a hospital may be material to the risk under a hospitalization policy. We find it impossible, the court concluded, to determine as a matter of law that the failure to disclose the earlier operation was immaterial to the hospitalization risk insured against or that plaintiff did not make the misrepresentation with intent to deceive. The judgment in favor of the defendant was accordingly affirmed.—*Turner v. National Hospitalization, Inc., 52 A. (2d) 274 (Dist. of Columbia, 1947).*

Dentists: Right to Restrain Defendant Dental Technicians from Picketing Office.—The plaintiff dentists filed suit for an injunction against the defendant, president of a union of dental technicians, to restrain the union from picketing their private offices. The case was heard on a motion for a temporary injunction in the Supreme Court, special term, Queens County, New York.

The union is composed of dental technicians, whose members are conducting a strike at their employer's plant, H. Brand Laboratories, Inc., which manufactures dentures. The plaintiffs are duly licensed dentists who practice their profession in the same community. No member of the union is employed by any of the plaintiffs; no plaintiff has working for him, as an employee, a dental mechanic or technician or any person doing his work in whole or in part. The union is picketing the places of business of each of the plaintiffs carrying signs which state that the H. Brand Laboratories, Inc., is on strike and that the plaintiffs supply dentures made by the struck laboratory. The factual statement on these signs is true. The plaintiffs insist that they are entitled to an injunction to restrain this picketing because they have no direct relationship with the striking dental technicians and therefore no "labor dispute" exists.

The nature of the relation between the laboratory and the plaintiffs is described as follows: "From time to time a dentist is called on to prepare inlays, bridges, false teeth and the like as a part of his professional service. For this purpose he takes an impression from the mouth of the patient. In order to conserve time, and thereby to meet the needs of all his patients, the dentist sends the impression to a dental laboratory, where a mechanic prepares the inlay, denture or bridge under the direction of the dentist. After the material is prepared from the wax impression, it is returned to the dentist, a fitting is had with the patient, the necessary adjustments are made by the dentist, and the product is then prepared in its final form. The initial preparation of the patient, the removal of the teeth, the taking of impressions, the specification of the type and design of the appliance, and the fitting and adjustment represent the professional skill of the dentist. The cost of the material used is a small part of his charge."

A legal controversy will not be removed from the realm of a "labor dispute," said the court, simply because the plaintiffs and the defendant are not related as employer and employee. If "the case involves persons who are engaged in the same industry, trade, craft or occupation" there is a labor dispute. The plaintiff dentists, the court pointed out, need the services of the technicians properly to provide for their patients. Were the technicians not concentrated in the manufacturer's plant (Brand Company), each plaintiff would have to employ one or more technicians as a part of his office staff and the machinery required to produce dentures would be among his equipment. The mere physical dissociation of the manufacturing of dentures from plaintiffs' offices will not exclude plaintiffs from the "industry, trade, craft or occupation" which uses those dentures for profit. Continuing, the court said that the plaintiff's offices are practically the sales departments for Brand Company. Taking the impression of the patient's gums in his own office the dentist passes that mold on to the manufacturer, who produces the denture. Back to the dentist's office goes the newly created denture for fitting in the patient's mouth. Back to the manufacturer again goes the denture for corrections, and this shuttling is continued until the dentist is satisfied. It is as if Brand Company were the back room or workshop of the dentist's establishment and Brand's employees the plaintiffs' helpers. Were they the plaintiffs' helpers, the work would be done no differently, excepting only the scene of their labors. The plaintiffs and the technicians are engaged in exactly the same occupation. Together they make dentures for particular persons. In this work they are fellow tradesmen. Each completed denture which is accepted and used is an accomplishment in concerted craftsmanship displayed by the plaintiffs and the technicians. It is the result which they hoped for when they essayed together to produce by their talents the exact denture required by the very person for whom it was fashioned. Their alliance in the manufacturing of the dentures is undetachable. Remove one and the effort fails. The way the plaintiffs and Brand Company carry on their business, concluded the court, establishes that "unity of interest" which serves to classify the plaintiffs as persons engaged in the same "industry, trade, craft or occupation" as the technicians and their union. Hence, said the court, this is a "labor dispute" and the complaint must be dismissed. Accordingly judgment was entered in favor of the defendant union.—*Jacobs v. Eisen, 68 N. Y. S. (2d) 921 (New York, 1947).*

Another case involving a different dentist and a different laboratory but the same union and a substantially similar course of conduct was decided just fifteen days later by the Supreme Court, special term, New York County. In that case the judge said: "The complaint does not attempt to comply with Civil Practice Acts, section 876-A and it is conceded that if this is a labor dispute the action and the motion must fail. It is unnecessary to review the relationship of a dentist with his patient and with the laboratory which makes the denture. It has been determined that no relationship of employer and employee nor of producer and consumer is involved and that the picketing under the circumstances constitutes a secondary boycott." The injunction requested by the plaintiff dentist in this case was granted.—*Brennen v. Eisen, 69 New York (2d) 441 (New York, 1947).*

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1937 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied with stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

214:1-120 (July) 1947

Unreliability of Cyanosis in Recognition of Arterial Anoxemia. J. H. Comroe Jr. and Stella Botelho.—p. 1.
Phlebography for Study of Obstruction of Veins of Superior Vena Caval System. S. Katz. H. H. Hussey and J. R. Veal.—p. 7.
Alterations in Form of Electrocardiogram in Patients with Mental Disease. H. E. Heyer, H. M. Winans and V. I. Plessinger.—p. 23.
Cicatrizing Enterocolitis in a Newborn Infant. C. E. Koop, Josephine G. Perlingiero and W. Weiss.—p. 27.
Neuromuscular System in Rheumatoid Arthritis: Electromyographic and Histologic Observations. L. R. Morrison, C. L. Short, A. O. Ludwig and R. S. Schwab.—p. 33.
Persistence of Penicillin in Cerebrospinal Fluid After Massive Intravenous Administration. R. L. Barton, Lydia Marshak, T. J. Bauer and L. Loewe.—p. 50.
Two Coexistent Strains of Viridans Streptococcus Isolated from Blood Cultures by Penicillin Sensitivity Tests. Helen MacLean and Katharine M. Howell.—p. 53.
*Spontaneous Occurrence of New Bacterial Infections During Course of Treatment with Streptomycin or Penicillin. L. Weinstein.—p. 56.
Ineffective Use of *Streptomycin* in Rheumatoid Arthritis. R. M. Rice, J. S. Browning and H. M. Powell.—p. 64.
*Sulfathiazole in Abnormal Human Biliary Tract. J. Zaslow and V. S. Counseller.—p. 68.
*Reiter's Syndrome. B. D. Pinck.—p. 76.
Study of Hepatic Function in Acquired Malaria. L. A. Schneider and P. L. Shallenberger.—p. 80.
Protein Depletion and Hepatic Function in the Dog: Rationale of Methionine in Therapy. L. L. Miller, C. A. Rogers, B. G. Lamson and M. W. Lambie.—p. 84.
Persistent Familial (Nonspecific) Serologic Flocculation Reactions for Syphilis Suggesting a Hereditary Mechanism. A. G. Singer and F. Boerner.—p. 89.
Subacute Combined Degeneration of Spinal Cord Occurring in Identical Twins. G. A. Schwarz and J. C. Todd.—p. 94.
Renal Decapsulation for Oliguria and Anuria. W. S. Culpepper and T. Findley.—p. 101.
Electroencephalography. F. G. Ebaugh and E. W. Busse.—p. 109.

Bacterial Infections During Treatment with Streptomycin or Penicillin.—Alterations in the bacterial flora in various parts of the body may occur in the course of therapy with streptomycin or penicillin, in addition to an effect on the specific organism responsible for an infection. Gram-positive bacteria may be eliminated from the nasopharyngeal flora when penicillin is administered and gram-negative ones when streptomycin is given. In most cases such changes in the bacterial population with suppression of certain groups of bacteria and increase in the number of others probably lead to no untoward result. In other cases such alterations in the flora result in the rapid growth of virulent bacteria, which may have been present originally only in small numbers. The author describes 5 cases of complicating infections occurring in the course of treatment with antibiotic agents, 2 following penicillin therapy and the others following streptomycin treatment. In all of these the second infection was produced by organisms normally present in the nasopharynx. Such development of new infections is a constant danger and must be watched for. The need for intensive bacteriologic study before and during the treatment with antibiotic agents cannot be overemphasized. The use of streptomycin and penicillin simultaneously at the beginning of an infectious disease is not recommended.

Sulfathiazole in Biliary Tract.—Zaslow and Counseller demonstrated the uselessness of penicillin and streptomycin in treating local infection in the presence of acute obstructive cholecystitis. They also found that following oral administration of 3 Gm. of sulfathiazole no drug was present in the bile from the gallbladder when the cystic duct was obstructed. The drug was present in the gallbladder bile when the cystic duct was patent and when the liver excreted it normally. Thus sulfathiazole is likely to be of no value in the treatment of patients with acute obstructive cholecystitis. Acute inflammation of the gallbladder does not alter the mode of entrance of the drug to its lumen. With regard to the hepatic bile, the authors state that after oral ingestion of 3 Gm. of sulfathiazole or intraperitoneal administration of 5 Gm. the drug is excreted in the hepatic bile of normal subjects. The ability of the liver to excrete the drug is impaired in the presence of obstructive jaundice. The greater the degree of hepatic damage, the less is the amount of drug excreted in the bile. Sulfathiazole is likely to prove of no value in the treatment of patients with acute obstructive jaundice with cholangitis. Free drainage of bile must be established if the drug is to be active.

Reiter's Syndrome.—Pinck surmises that Reiter's syndrome is perhaps not as as rare as has been supposed, since he saw 12 cases in the course of two years. It is an unusual disease which is encountered in young males and is characterized by urethritis, conjunctivitis and migratory arthritis. Skin lesions are occasionally noted; these appear as either keratosis blennorrhagica or balanitis circinata. The etiology of the disease is obscure and no definitive therapy is available. The course of the disease is self limited, never terminating, however, in less than three months. Recurrences are not unusual; it may recur years after the initial episode.

American Journal of Medicine, New York

3:1-128 (July) 1947

Influence of Dibenamine (N, N-Dibenzyl-Beta-Chloroethyl-Amine) on Certain Functions of Sympathetic Nervous System in Man. H. H. Hecht and R. B. Anderson.—p. 3.
*Diagnostic Value of Secretin Test: Including a Report of 19 Operated or Autopsied Cases with Anatomical Studies of Pancreas. M. Lake. —p. 18.
Effect of Sodium Salicylate on the Acid-Base Balance of Blood. Margaret N. Boyle, Katharine Smull and René Wegria.—p. 31.
*Pulmonary Embolism Caused by Penicillin-Oil-Beeswax: Experimental Investigation, with Report of a Near-Fatal Case. P. K. Bondy, W. H. Sheldon and H. S. Weens.—p. 34.
Electrocardiogram in Lupus Erythematosus Disseminatus. I. M. Liebow and H. Feil.—p. 44.

Diagnostic Value of Secretin Test.—Lake says that a secretin suitable for intravenous use in man has become available. It is heat stable, free from allergens and cholecystokinin and has caused few untoward reactions. With the use of a specially constructed double barrel gastroduodenal tube and constant suction, Agren and Lagerlöf succeeded in obtaining the duodenal contents uncontaminated by gastric juice. With this technic it became possible to study the effect of a measured dose of secretin on the external secretion of the pancreas. The author presents the results of the secretin test in 18 subjects without pancreatic disease and in 13 subjects with demonstrated disease of the pancreas. The findings agree with those of other investigators and indicate that the secretin test is a valuable diagnostic procedure when extensive structural changes are present in the pancreas. The earliest and most frequent observation is a decrease in diastase secretion. This was usually the only abnormal finding in chronic pancreatitis. A case of extensive carcinoma of the pancreas with functional hyperactivity is reported. A definite response to secretin was demonstrated after removal of approximately five sixths of the organ, the remainder having been implanted into a loop of the jejunum. The composition of pancreatic juice obtained through a fistula was studied before and after the injection of secretin. The composition of this juice was similar to that of the duodenal contents obtained through the swallowed tube following injection of secretin. The external secretory function of the pancreas was studied at intervals after an attack of acute pancreatic necrosis, and the results showed progressive deterioration. The disappearance of bile from the duodenal contents following the *injection of secretin appears to be a reliable indication* of the presence of a normally functioning gallbladder.

Pulmonary Embolism Caused by Penicillin-Oil-Beeswax.—Bondy and his associates report the experience of a Negro woman with cutaneous manifestations of secondary syphilis. She was started on a course of daily injections of 600,000 units of penicillin in oil and beeswax. Eight daily injections were given without difficulty. A few seconds after the ninth injection she complained of a peculiar taste in her mouth. She coughed a few times. After an hour's rest she was sent home. The next morning physical examination of the lungs gave normal results. Since the patient had no fever and felt well she was given the final injection. That afternoon she began to cough again and by evening had developed an uncomfortable shortness of breath. She returned to the clinic and was admitted to the medical ward. At that time her temperature was 103 F., pulse rate 130, respiratory rate 40 and blood pressure 130/70. Her lips and finger nails were cyanotic and there was a pronounced inspiratory nasal flare. Increasing pulmonary changes were noted in the roentgenogram, and pulmonary lipoid embolism was suspected. Animal experiments were done which indicated that the severity of the reaction was due to two factors: (1) the viscosity of the oil-beeswax mixture which caused it to block large branches of the pulmonary artery, and (2) the severe inflammatory reaction elicited by the beeswax. Evidence was obtained which suggested that the severity of the inflammation might have been due to the chemical composition of the wax. The authors emphasize the importance of precaution against intravenous injection of penicillin-oil-beeswax.

American Journal of Ophthalmology, Cincinnati

30:843-954 (July) 1947

Cyclodialysis: Follow-Up Study. H. S. Sugar.—p. 843.
Inverse Cyclodialysis. R. N. Shaffer.—p. 860.
Relative Value of Several Diagnostic Tests for Chronic Simple Glaucoma. S. Bloomfield and L. Kellerman.—p. 869.
Lipiodol Studies of Chronic Dacryocystitis. S. A. Fox.—p. 878.
Factors in Diagnosis of Aniseikonia and Paired Maddox Rod Tests. P. W. Miles.—p. 885.
Detachment of Choroid and Retina: Anatomic and Other Considerations in Differential Diagnosis. G. H. Stine.—p. 897.

American Journal of Orthopsychiatry, New York

17:379-570 (July) 1947. Partial Index

Learning as a Psychosomatic Problem: Round Table, 1946. E. Liss and others.—p. 381.
Release of Repressed Tendencies. P. M. Symonds.—p. 404.
Guidance Problems Among Student Nurses. F. Wyatt.—p. 416.
Social Security. Jane M. Hoey.—p. 426.
Fundamentals of Psychotherapy and a New Orientation. M. C. Greco and I. B. Fecher.—p. 439.
Variations in Adolescent Adjustment of Institutionally Reared Children. W. Goldfarb.—p. 449.
Resident Psychiatric Treatment with Children. J. F. Robinson, Anabel Maxwell and Kathryn E. Dominguez.—p. 458.
Hysteria in Childhood: Follow-Up Study. Charlotte F. Walker.—p. 468.
Serial Sevens Test as a Psychometric Instrument. L. A. Pennington.—p. 488.
Psychologic Effects of War on Young Children. Florence M. Young.—p. 500.
Experiences with Closed Ward Group Psychotherapy. A. S. Luchins.—p. 511.
Incidence and Analysis of Broken Family in the Background of Neurosis. L. Madow and S. E. Hardy.—p. 521.

American Journal of Pathology, Ann Arbor, Mich.

23:513-676 (July) 1947

Renal Arteriolar Changes in Anuric Crush Syndrome. N. Goormaghtigh.—p. 513.
Studies of Thermal Injury: I. Conduction of Heat To and Through Skin and Temperatures Attained Therein: Theoretical and Experimental Investigation. F. C. Henriques Jr. and A. R. Moritz.—p. 531.
Histologic Study of Skeletal Muscle in Acute Ischemia. J. W. Harman.—p. 551.
Benign Giant Cell Tumor of Tendon Sheaths: Example of Sclerosing Hemangioma. L. N. Foster.—p. 567.
*Endothelial Cell Sarcoma of Liver Following Thorotrast Injections. H. E. MacMahon, A. S. Murphy and Margaret I. Bates.—p. 585.
Myelolipoma of Adrenals: Report of 7 Cases. H. K. Giffen.—p. 613.
Observations on Tyzzer's Disease in Mice. F. L. Rights, Elizabeth B. Jackson and J. E. Smadel.—p. 627.
Histopathology of Acute Mumps Orchitis. E. A. Gall.—p. 637.
Lymphogranuloma Venereum: Histologic Study of Primary Lesion, Bubonulus and Lymph Nodes in Cases Proved by Isolation of Virus. W. H. Sheldon and A. Heyman.—p. 653.
Mucormycosis of Central Nervous System Associated with Hemochromatosis: Report of a Case. P. M. LeCompte and W. A. Meissner.—p. 673.

Endothelial Cell Sarcoma of Liver After Injection of Thorotrast.—MacMahon and his co-workers report the results of giving thorotrast to visualize the liver. With the aid of this diagnostic procedure, combined with positive serologic tests, it was possible to make an accurate diagnosis of hepatic syphilis with gumma. Following specific therapy, the patient made a clinical recovery and for twelve years lived a reasonably normal life. Death came suddenly at the age of 70. Necropsy confirmed the diagnosis of syphilis and in addition revealed a primary hemorrhagic endothelial cell sarcoma of the liver, the source of fatal hemorrhage, and widespread irradiation injury affecting particularly the liver and hemopoietic system. A study of this case supports the contention that thorotrast in sufficient quantities is injurious as a radioactive substance. Evidence is also produced to show that thorotrast, like other radioactive substances, in sufficient time may act as a sarcogenic agent.

Am. J. Syphilis, Gonorrhea and Ven. Dis., St. Louis

31:347-468 (July) 1947

*Biologic False Positive Reactions in Serologic Tests for Syphilis: I. Preparation and Properties of Serologically Active Serum Globulin Fractions Obtained by Fractional Precipitation with Ammonium Sulfate. H. Neurath, E. Volkin, J. O. Erickson, H. W. Craig, F. W. Putnam and G. R. Cooper.—p. 347.
Id.: II. Preparation and Properties of Serologically Active Serum Euglobulin Fractions Obtained by Isoelectric Precipitation. J. O. Erickson, E. Volkin, H. W. Craig, G. R. Cooper and H. Neurath.—p. 374.
Id.: III. Preparation and Properties of Serum Protein Fractions Which Inhibit Biologic False Positive Reactions. E. Volkin, H. Neurath, J. O. Erickson and H. W. Craig.—p. 397.
Id.: IV. Quantitative Aspects of Inhibition Phenomenon. E. Volkin, H. Neurath and H. W. Craig.—p. 413.
Id.: V. Preliminary Survey Analysis with Euglobulin-Inhibition Method for Serologic Differentiation Between True and Biologic False Positive Reactions. H. Neurath, E. Volkin, H. W. Craig and J. O. Erickson.—p. 436.
Id.: VI. Partial Purification of Antibodies of Syphilitic Human Sera by Adsorption on Freshly Precipitated Calcium Phosphate. F. W. Putnam, E. Volkin, H. W. Craig and H. Neurath.—p. 457.

Biologic False Positive Reactions in Syphilis.—Neurath and his associates point out that false positive reactions have been observed in varying intensities and frequencies in apparently healthy persons and in patients with diseases other than syphilis. In syphilis, more than in any other disease, serologic tests play a dominant role in diagnostic procedures. Since in the absence of clinical manifestations or history of syphilis the serologic results must be accepted as the sole criterion for a diagnostic decision, the need for eliminating or recognizing false positive reactions is self evident. While many false positive reactions are of technical origin and may be eliminated by strict adherence to recommended laboratory procedures, others persist even when utmost precautions are observed.

Annals of Internal Medicine, Lancaster, Pa.

27:1-194 (July) 1947

*Further Observations on Treatment of Typhus Fever with Para-Aminobenzoic Acid. J. C. Snyder, A. Yeomans, D. H. Clement and others.—p. 1.
*Report of Outbreak of Q Fever at National Institute of Health: I. Clinical Features. C. G. Spicknall, R. J. Huebner, J. A. Finger and W. P. Blockers.—p. 28.
Clinical Significance of Diverticulosis, Including Diverticulitis, of Gastrointestinal Tract. E. C. Nash and W. L. Palmer.—p. 41.
*Four Important Congenital Cardiac Conditions Causing Cyanosis to be Differentiated from the Tetralogy of Fallot: Tricuspid Atresia, Eisenmenger's Complex, Transposition of Great Vessels, and Single Ventricle. F. Alexander and P. D. White.—p. 64.
*Nephrogenic Diabetes Insipidus: Transmitted by Females and Appearing During Infancy in Males. R. H. Williams and C. Henry.—p. 84.
Nonhemophilic Hereditary Hemorrhagic Diathesis: Report of a Family of Bleeders. L. Levy.—p. 96.
Experiences with Tyrothricin in Rhinology, Surgery and Dermatology. P. L. Goldman, S. A. Roddenberry, M. P. Rizutto, H. E. Fitch Jr. and M. Waisman.—p. 103.

Para-Aminobenzoic Acid in Typhus.—Snyder and his collaborators record experience with para-aminobenzoic acid in treating patients with epidemic louse-borne typhus. They analyze data obtained in 1944 from a series of alternately treated and control patients in Cairo, Egypt, together with data from a similar series observed in 1945. They also describe the treatment of 60 patients in an epidemic of typhus in a concentration camp in Germany and of a miscellaneous group of 5 patients. Analysis of the results in patients treated with para-aminobenzoic acid and in those not treated with this drug reveals significant differences. Treatment with para-aminobenzoic acid is more effective if it is begun early in the first week than if it is begun later. Emphasis is placed on the importance of attaining promptly and maintaining throughout the course of treatment a concentration of the drug in the blood above 10 mg. per hundred cubic centimeters for Rickettsia prowazeki and 35 mg. per hundred cubic centimeters for Rickettsia orientalis. The urine must be kept neutral or alkaline during treatment. The transient lowering of the leukocyte count in some patients was the only evidence of toxic reaction to para-aminobenzoic acid. The pathologic material from 4 fatal cases of typhus treated with para-aminobenzoic acid showed no lesions indicative of poisoning with the drug. One fatal case showed nephrosis of uncertain etiology. Secondary bacterial infections do not preclude the use of para-aminobenzoic acid for rickettsial diseases, but penicillin is advocated as an adjuvant in the presence of secondary infections. Continuance of para-aminobenzoic acid therapy is contraindicated (1) if crystals appear in the urine, (2) if the white blood cell count falls below 3,000 per cubic millimeter and (3) if the polymorphonuclear leukocytes are reduced to less than 25 per cent of the total white blood cell count.

Outbreak of Q Fever at National Institute of Health.—Spicknall and his associates say that at the National Institute of Health, where research was being done on the Rickettsia of Q fever, 18 cases of the fever occurred in an explosive manner between February 6 and February 11. By May 31 the total number reached 47. Pneumonitis was not the predominant clinical characteristic of this outbreak although it was present in 13 of the 45 patients. In many of the patients with pneumonitis the lesions were easily detected by physical signs. Bloody sputum was observed in 5 of these patients. The differential diagnosis may be difficult, but serologic tests are helpful in arriving at a correct diagnosis. Penicillin, sulfadiazine and transfusion of immune blood had no definite effect on the course of the disease.

Four Congenital Cardiac Conditions Causing Cyanosis to Be Differentiated from the Tetralogy of Fallot.—According to Alexander and White, recent surgical advances in the treatment of the tetralogy of Fallot reflect the importance of both the differential diagnosis and the careful selection of suitable cases for surgical treatment. The authors report 4 instances of cyanosis observed at the Massachusetts General Hospital in which the final diagnosis was at variance with that of the tetralogy of Fallot. In each of these the clinical determination of the cardiovascular anomaly before operation would have been of great help to the surgeon, who in each instance followed the Blalock procedure, which consists in anastomosing a suitable vessel of the systemic arterial circulation to the pulmonary artery. Emphasis is placed on the occurrence of tricuspid atresia in a 5½ month old boy in whom periodic attacks of cyanosis were noted by the mother and who showed on physical examination a generalized slate blue color, a grade 4 systolic murmur in the second and third interspaces just to the left of the midsternal line, and a palpable liver. Electrocardiography revealed left axis deviation and x-ray examination showed an enlarged heart without evidence of pulmonary engorgement. A boy aged 5 years with probable Eisenmenger's complex complained of intermittent attacks of shortness of breath and cyanosis. Physical examination disclosed a persistent cyanosis, an enlarged heart, with a grade 2 systolic murmur and a barely palpable liver. X-ray examination of the chest showed pulmonary congestion, and the electrocardiogram showed right axis deviation. The third anomaly consisted of a transposition of the great vessels and was observed in a 17 year old boy who was short of breath, cyanotic and hoarse for the greater part of his life and who had had epistaxis within recent months. Physical examination revealed deep cyanosis, clubbing of the digits and toes and an enlarged heart without murmurs or evidence of pulmonary congestion. X-ray examination suggested the possibility of transposition of the great vessels. Electrocardiography revealed right axis deviation. The fourth patient was that of a boy aged 1 month with a single ventricle. He had periodic episodes of cyanosis and difficulty in breathing. Physical examination revealed moderate dyspnea, cyanosis, an enlarged heart, a grade 3 systolic murmur at the apex and a palpable liver. Right axis deviation was prominent in the electrocardiogram.

Nephrogenic Diabetes Insipidus.—Williams and Henry report observations on 7 members of one family in five generations with symptoms of diabetes insipidus. The disease became apparent soon after birth and occurred only in males but was transmitted only by females. It appeared to be a sex-linked, recessive characteristic. The disease did not respond to pitressin therapy. Neither the serum nor the body cells inactivated pitressin any more rapidly than in normal persons. Since 1 patient reacted to pitressin with generalized blanching and abdominal cramps but not with decreased polyuria, it was concluded that a physiologic and possibly an anatomic defect existed in the kidneys. Renal function tests in this patient showed impairment in the tubular excretion of diodrast and of phenolsulfonphthalein. There was also a decrease in the plasma clearance of urea, sodium, potassium and creatinine. There was a slight decrease in the glomerular filtration and increase in the filtration fraction. The maximal rate of tubular dextrose reabsorption was normal. Intravenously administered sodium chloride was excreted fairly rapidly. It is concluded that there probably is a congenital anomaly of the loop of Henle and the distal convoluted tubules. Although no renal function studies could be made in the other cases, it is assumed that they had the same type of disease. The literature contains no reports of this type of diabetes insipidus.

Archives of Dermatology and Syphilology, Chicago

56:1-142 (July) 1947

*Granuloma Inguinale Treated with Streptomycin: Report of 3 Cases. R. L. Barton, R. M. Craig, G. X. Schwemlein and T. J. Bauer.—p. 1.

Treatment of Undermining Acne Lesions by Exteriorization. E. S. Bereston and H. Benteen.—p. 7.

Atypical Lichenoid Dermatitis: Drug Eruption Due to Quinacrine Hydrochloride (Atabrine). H. S. Alden and L. J. Frank.—p. 13.

Effects of Resin of Podophyllum on Normal Skin, Condylomata Acuminata and Verrucae Vulgares. M. Sullivan and L. S. King.—p. 30.

Acrokeratosis Verruciformis (Hopf): Report of 14 Cases in One Family in Four Generations, with Review of Literature. M. L. Niedelman.—p. 48.

Acne Vulgaris in Tuberculous Patients. A. W. Stillians.—p. 64.

*Cutaneous Manifestations of Monocytic Leukemia. W. R. Hubler and E. W. Netherton.—p. 70.

Biologic Evaluation of Vehicles for External Application of BAL. M. B. Sulzberger, R. L. Baer, A. Kanof and Clare Lowenberg.—p. 90.

Failure of Resin of Podophyllum in Treatment of Verruca Vulgaris. S. B. Frank and W. Cohen.—p. 109.

Transitory Benign Plaques of the Tongue: Treatment with Penicillin. C. Shaw.—p. 110.

Tinea Capitis. R. J. Burkhart.—p. 111.

Rapid Method for Seeding Nail Cultures. A. Kurtin and R. Yontef.—p. 112.

Streptomycin in Granuloma Inguinale.—Barton and his associates report the results of treatment of 3 patients, all Negroes, 2 women and 1 man, who had evidence of venereal lymphogranuloma. With the recent demonstration of the bacillary nature of the Donovan body it was felt that a study of the effect of an antibiotic on the disease was warranted. Freedom from syphilis, chancroid and lymphogranuloma venereum was established as far as dark field examination, serologic tests, cutaneous tests and clinical examinations were concerned. Donovan bodies were demonstrated in all 3 patients prior to the initiation of treatment. Streptomycin therapy resulted in excellent clinical improvement with disappearance of Donovan bodies from the lesion in the 3 patients. Two patients exhibited a relapse after the supply of streptomycin was exhausted. One patient treated with streptomycin for forty-one days was observed for two and one-half months after the completion of treatment with no evidence of relapse. It is believed that streptomycin is a valuable drug in the treatment of granuloma inguinale.

Cutaneous Manifestations of Monocytic Leukemia.—Hubler and Netherton report 50 cases of monocytic leukemia of the Schilling type which have been observed at the Cleveland Clinic Foundation Hospital since 1933. They describe the symptomatology, clinical features and hematology and place special emphasis on the incidence and types of mucocutaneous lesions seen in this type of leukemia. Monocytic leukemia may be chronic but is oftener an acute disease with severe constitutional symptoms, and it progresses rapidly to fatal termination. There is a much higher incidence of mucocutaneous lesions in monocytic than in lymphatic or myelogenous leukemia, approximately 50 per cent of the patients developing such lesions. Hypertrophy of the gums accompanied with areas of necrosis and ulceration of the oral mucosa, cutaneous hemorrhages and hemorrhages of the mucous membrane are common features of monocytic leukemia but cannot be considered pathognomonic of the disease. In monocytic leukemia the hemogram may show leukopenia or relatively moderate leukocytosis as compared with that observed in lymphatic and myelogenous types. The diagnosis is ultimately determined by the characteristics of the blood smear and the bone marrow obtained by sternal puncture. Histopathologic changes in specific lesions of monocytic leukemia cutis are usually characteristic, but it is not uncommon for a general pathologist to return a diagnosis of sarcoma.

Archives of Neurology and Psychiatry, Chicago

58:1-124 (July) 1947

Rate of Regeneration of Sensory Nerve Fibers. S. Sunderland.—p. 1.
Rate of Regeneration of Motor Fibers in Ulnar and Sciatic Nerves. S. Sunderland.—p. 7.
*Neuropsychiatric Manifestations During Course of Malaria: Experiences in Mediterranean Theater in World War II. B. Boshes.—p. 14.
Origin of Tumors of Midbrain. J. M. Friedman and L. Greenstein. —p. 28.
*Toxic Effects of Intrathecal Administration of Penicillin. A. E. Walker. —p. 39.
Dystonic Form of Amaurotic Family Idiocy. Report of Case. A. Marques. —p. 46.
Congenital Cyst of Spinal Meninges as Cause of Intermittent Compression of Spinal Cord. R. D. Adams and W. Wegner.—p. 57.

Neuropsychiatric Manifestations During Malaria.—Boshes directs attention to the variable presenting syndrome of cerebral malaria. In assessing some of the psychotic reactions incident to malaria, the role of the medication must be determined. He and his colleagues were in contact with tens of thousands of soldiers taking quinacrine as suppressive treatment, 0.4 Gm. per week. Large numbers of patients over a period of almost three years were treated for malaria in the general hospital, but not a single case of quinacrine psychosis was encountered. In the Mediterranean theater, the incidence of cerebral malaria was comparatively low. The cases that were presented to the neuropsychiatrist, especially when the Italian campaign was under way, were the bizarre, the atypical. The psychiatrist was often called to see a patient with a bursting headache, severe retro-orbital pain and backache. No focal or meningeal signs could be elicited, but the advent of a typical or atypical febrile course would lead to a series of "malaria slides" being made, with the result that the diagnosis was readily established. Malaria was a common disease in the American armed forces in the Mediterranean theater of operations. Neuropsychiatric complications simulating meningitis, encephalitis, epilepsy, cerebral tumor, vascular lesions and psychiatric disorders were encountered. "Cerebral" forms of malaria were not limited to the disease caused by Plasmodium falciparum. Plasmodium vivax and mixed infections could produce these pictures.

Toxic Effects of Intrathecal Administration of Penicillin.—Walker reviews observations made on monkeys following intrathecal administration of penicillin and reports 2 cases illustrating types of neural reaction to intrathecal administration of penicillin—radiculitis and myelopathy associated with chronic leptomeningeal thickening. Such reactions usually occur only when large amounts of penicillin are injected into the subarachnoid space. When moderate or small doses of the drug are used the complication is rarely encountered.

Archives of Physical Medicine, Chicago

28:429-482 (July) 1947

Influence of Muscle Action on Tissue Repair. M. Smart.—p. 429.
Physical Therapy in Management of Tendon Repair. G. D. Wilson. —p. 439.
Energy Cost of Exercises for Convalescents. R. A. Weiss and P. V. Karpovich.—p. 447.
New Apparatus for Muscle Stimulation. W. D. Paul and O. A. Couch Jr.—p. 454.
*Preventable Deformities in Poliomyelitis. E. W. Lowman.—p. 455.

Preventable Deformities in Poliomyelitis.—Lowman maintains that muscle shortening in poliomyelitis is the result of unreleased muscle spasm and is the basis for development of contractures; deformity is the end result of the latter. Early treatment has as one major objective the prevention of the cycle consisting of spasm, shortening, contracture and deformity. In 1944 the Bureau of Medicine and Surgery of the Navy established a center for the treatment of poliomyelitis occurring among Navy and Marine personnel. The care and management of these patients became the responsibility of the Department of Physical Medicine. Over a period of two years 88 patients were received at this hospital for treatment. Patients treated early with Kenny packing and stretching uniformly presented fewer contractures and deformities on receipt at the special center. The longer the existence of a contracture or a deformity prior to the institution of physical therapy, the worse was the prognosis for correction. The more rapidly the elimination of spastic muscular states in the acute stage, the less was the likelihood of progression to contractures. The earlier the relief of spasm, the better was the prognosis for return of function. The value of physical therapy is in inverse proportion to the time lapse prior to the institution of treatment. Deformities in poliomyelitis constitute an indictment of the adequacy of the treatment administered. In the management of 88 cases of poliomyelitis among Navy and Marine service personnel the incidence of deformities has been in accordance with these observations.

Bulletin of Los Angeles Neurological Society

12:79-110 (June) 1947

Notes on Pathology of Cranial Tumors. 5. Vascular Anomalies, Angiomas and Angioblastic Tumors of Skull and Its Investments. C. B. Courville.—p. 79.
Carotid-Cavernous Communication of Traumatic Etiology: Report of 2 Cases. H. W. Dueker and J. Ma. Sanchez-Perez.—p. 97.
Graphic Method in Neurologic Examination: Wavy Tracings to Record Motor Control. W. T. Grant.—p. 104.

Bulletin New York Academy of Medicine, New York

23:383-438 (July). 1947

Prophylaxis of Cancer. F. E. Adair.—p. 383.
Early Diagnosis of Cancer. Elise S. L'Esperance.—p. 394.
Tumors of Eye and Orbit. R. L. Pfeiffer.—p. 410.
Some Public Health Implications of Selective Service Rejections. G. St. J. Perrott.—p. 420.

23:441-494 (Aug.) 1947

Recent Advances in Medical Treatment of Heart Diseases. P. D. White. —p. 441.
Carcinoma of Prostate. A. L. Dean.—p. 454.
*Results of Prostigmine and Tridione Therapy in 50 Cases of Spastic Neurologic Disorders. P. G. Denker and L. I. Kaplan.—p. 472.
*Clinical Manifestations of Adrenal Cortical Hyperfunction. L. J. Soffer. —p. 479.

Neostigmine and Tridione in Spastic Neurologic Disorders.—Denker and Kaplan found that neither neostigmine nor tridione produced any significant therapeutic effect on muscle spasticity in 50 cases of various neurologic disorders with demonstrable increase in muscle tonus. This lack of improvement is in sharp contrast to the reported benefits from neostigmine on muscle spasm associated with such conditions as poliomyelitis, extremity fractures, rheumatoid arthritis and fibrositis and does not compare favorably with the results of neostigmine or tridione therapy reported by some investigators in the management of infantile cerebral spastic palsy. It is possible that the proposed hypothesis for the central action of neostigmine in cases of muscle spasm is in error and that the drug acts at the neuromuscular junction, relieving spasm only when it is the result of increased muscle irritability on the basis of local inflammatory processes or reflex spasm from involvement of anterior horn cells. This type of action may not, therefore, be expected to relieve spasticity based on destruction of pyramidal or extrapyramidal tracts in the central nervous system. There is the additional possibility that previous favorable reports of the action of neostigmine on diseases with muscle spasm reflect more the results of concomitant physical therapy than of the drug action itself.

Clinical Manifestations of Adrenal Cortex Hyperfunction.—Soffer thinks that in order to study the clinical role of adrenal cortex hyperfunction it is essential to use the adrenogenital syndrome due to a tumor of the adrenal cortex or to hyperplasia of the adrenal cortex as the starting point. The symptoms of the adrenogenital syndrome can be divided into three groups: (1) those associated with premature sexual and physical development, (2) those associated with signs and manifestations of increased or decreased virility and (3) those other symptoms which are part of the disease but are not manifestations or disturbances in sexual physiology. The first group includes the evidences of pseudohermaphroditism and precocious physical development. In the second category are the manifestations of male virilism in the female and signs of feminization in the male. The third group includes the development of obesity, hypertension, glycosuria, osteoporosis, purplish striae, polycythemia, dusky cyanotic discoloration of the skin, acneform eruptions and a tendency to purpura and ecchymosis. The symptoms of the first two groups are referred to as the adrenogenital syndrome, while those of the third group are known as Cushing's syndrome. There seems to be no clearcut explanation as to why some patients will show predominantly the picture of an adrenogenital syndrome, while in others the major manifestations are those of the curious metabolic disturbances referred to as Cushing's syndrome and a third group will show a combination of the two. An identical picture may be produced by a tumor of the adrenal cortex, bilateral hyperplasia of the adrenal cortex, or a tumor of the anterior lobe of the hypophysis in the presence of an ostensibly normal adrenal cortex. An identical clinical picture may be presented in the absence of any overt anatomic abnormalities in the endocrine glands. The frequency with which this disease is associated with some overt pathologic condition of the adrenal cortex and the complete reversal of the clinical picture after successful surgical treatment of such adrenal change leads one to the conclusion that these glands play a vital role in the pathogenesis of this syndrome. The diagnosis of adrenal cortex hyperfunction is made on the basis of a number of factors rather than on one isolated manifestation. The factors which should be emphasized are the typical clinical history, the characteristic physical appearance, changes in the blood electrolytes, if present, and determination of the 17-neutral ketosteroids. Intravenous pyelography may help in determining an adrenal tumor. Of even greater aid is perirenal insufflation, which may show the presence of a tumor or hyperplasia of the adrenal cortex.

Delaware State Medical Journal, Wilmington

19:109-128 (June) 1947

Continuous Spinal Anesthesia in Abdominal and Thoracic Surgery. W. T. Lemmon.—p. 109.
Rheumatic Carditis with Congestive Failure: Presentation of Case. C. B. Scull and J. R. Caldwell.—p. 115.
Rupture of the Uterus: Case Report, with Review of Literature. O. A. James and C. H. Ligon.—p. 120.

Endocrinology, Springfield

40:361-466 (June) 1947. **Partial Index**

In Vivo Augmentation of Thyrotropic Hormone and Partial Reactivation of Iodinated (Inactive) Thyrotropic Hormone Extract by Goitrogens. A. Albert, R. W. Rawson, C. Riddell, P. Merrill and B. Lennon. —p. 361.
*Improved Method of Extraction and Purification of Relaxin from Fresh Whole Ovaries of the Sow. A. Albert, W. L. Money and M. X. Zarrow.—p. 370.
Effects of Testosterone Propionate on Body Weight and Urinary Nitrogen Excretion of Normal and Hypophysectomized Rats. G. S. Gordan, H. M. Evans and Miriam E. Simpson.—p. 375.
Adaptation of Spiral Artery in Rabbit Ovary to Changes in Organ Size After Stimulation by Gonadotropins: Effect of Ovulation and Luteinization. S. R. M. Reynolds.—p. 381.
Effects of Hypophysectomy on Gastric Acidity of Adult Female Rats. R. C. Crafts and B. S. Walker.—p. 395.
Iodide Concentrating Mechanism of Rat Thyroid and Its Inhibition by Thiocyanate. J. E. Vanderlaan and W. P. Vanderlaan.—p. 403.
Cytochemical Evidence for Cessation of Hormone Production in Zona Glomerulosa of Rat's Adrenal Cortex After Prolonged Treatment with Desoxycorticosterone Acetate. R. O. Greep and H. W. Deane.—p. 417.
Effect of Phenobarbital on Action of Insulin. J. M. Johlin.—p. 426.

Improved Potency of Relaxin Extracted from Fresh Ovaries of Sows.—Albert and his co-workers say that relaxin, a water-soluble substance of the ovary which produces relaxation of the pelvic ligaments, used to be prepared either from fresh sow corpora lutea or from semidried, defatted luteal tissue obtained as by-product from a commercial procedure for the preparation of progestin. They describe an improved method for the extraction and purification of relaxin from fresh whole ovaries of the sow. Results of tests indicated that the relaxative potency depended on the state of the reproductive system, since ovaries from pregnant animals were several hundred times as potent as those from nonpregnant animals. Material from pregnant animals being difficult to obtain, the authors extract relaxin from fresh whole unselected ovaries. The ovarian extract is ten times more potent than that obtained from corpora lutea.

Gastroenterology, Baltimore

8:695-832 (June) 1947

*Importance of Malignant Degeneration as a Complication of Chronic Ulcerative Colitis. R. B. Cattell and E. J. Boehme.—p. 695.
Method for Determining Effect of Various Agents on Gastric Evacuation in Man. J. H. Annegers and A. C. Ivy.—p. 711.
*Delayed Convalescence Following Acute Hepatitis: Clinical and Laboratory Evaluation. D. F. Marion.—p. 717.
Esophagoscopy by Means of Flexible Instrument: New Esophagogastroscope. E. Boros.—p. 724.
Observations on Series of Cases of Sprue in Prison Camp in India. M. Stefanini.—p. 729.
Relationship of Trauma to Diseases of Gastrointestinal Tract. B. B. Crohn.—p. 735.
Chronic Gastritis Problem: "Functional" Upper Gastrointestinal Disease in Military Personnel and Value of Establishing an Organic Basis for Diagnosis and Treatment. E. D. Palmer.—p. 743.
Plasma Vitamin C Levels in Patients with Peptic Ulcer: Response to Oral Load Test of Ascorbic Acid. V. M. Crescenzo and D. Cayer.—p. 754.
Treatment of Biliary Tract Diseases in Elderly Patients. A. Behrend. —p. 762.
Late Restoration of Gastric Acidity After Thoracic Vagotomy in Dog. Frances R. Vanzant.—p. 768.
Assay Method for Anti-Ulcer Substances. Frances Pauls, A. N. Wick and E. M. MacKay.—p. 774.
Hepatomegaly with Jaundice Due to Primary Amyloidosis. L. Zetzel. —p. 783.
Large Diaphragmatic Hernia Without Symptoms: Report of 2 Cases. M. G. Goldner and J. H. Levy.—p. 788.

Malignant Degeneration and Chronic Ulcerative Colitis.—According to Cattell and Boehme, chronic ulcerative colitis predisposes to the development of cancer in the colon and rectum. The frequency of this complication is not known. The approximately 75 cases appearing in the literature do not give a true picture of the prevalence of the complication. The authors present the histories of 9 additional patients each of whom had one or more operations at their clinic. In this series the average duration from the onset of ulcerative colitis until the development of the cancer was over nine years. In the series of 54 cases of Bargen and Sauer it was 17.6 years. During such a long interval many cases are not traceable. It is also probable that some patients die of carcinoma when the ulcerative colitis is in complete remission, and the death is not associated with the previous ulcerative colitis or it is assumed that it is a reactivation of the colitis. A second factor in this apparent paucity of cases may be that operation is not performed in most cases. Carcinoma arising on ulcerative colitis is highly malignant and metastasizes early. All patients with long-standing ulcerative colitis should be studied at frequent intervals as a means of early discovery of malignant disease; this offers the only hope of improving the present bad results.

Delayed Convalescence Following Acute Hepatitis.—Marion describes the clinical and laboratory features of a representative group of patients transferred to a final type army hospital because of failure to recover completely after prolonged hospital treatment for acute hepatitis. The medical record of 82 patients provided the data for the report. All were men, with ages ranging from 18 to 44 years, the average age for the group being 26 years. In the delayed convalescence group 35 patients recovered both objectively and subjectively after prolonged and intensive treatment. An additional 36, while completely recovered subjectively, continued to show objective evidence of mild hepatic impairment. Seven patients continued to present subjective symptoms of possible hepatic origin long after all objective evidence of dysfunction had disappeared. The limitations of available objective tests must be kept in mind. The 4 cases diagnosed early hepatic cirrhosis, if correctly classified, probably represent true progression of a continuous disease to a point where one can no longer anticipate complete recovery.

Iowa State Medical Society Journal, Des Moines

37:263-342 (July) 1947

Resection of Right Portion of Colon with End-to-End Ileotransverse Colostomy for Malignancy. C. W. Mayo.—p. 263.
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Health Guidance in Maturity. H. W. Rathe—p. 270.
Family Physician and the School Health Program. Gertrude E. Cromwell.—p. 271.
Pros and Cons of Penicillin Therapy in Otolaryngology. L. H. Prewitt.—p. 273.
Incidence of Bronchiogenic Carcinoma in the Veterans Hospital. R. E. Drown.—p. 278.

37:343-390 (Aug) 1947

History of Treatment of Poliomyelitis. R. K. Ghormley.—p. 343.
Epidemiology of Poliomyelitis. G. W. Anderson.—p. 350.
Diagnosis of Poliomyelitis. L. F. Hill.—p. 353.
Present Concept of Treatment of Poliomyelitis. E. C. Elkins and K. G. Wakim.—p. 356.
Acute Poliomyelitis: Study of Patients Seen at Raymond Blank Memorial Hospital During 1946. J. M. Standlefer.—p. 362.
Some Industrial Health Hazards and Their Control. C. L. Campbell.—p. 366.

J. of Industrial Hygiene and Toxicology, Baltimore

29:203-278 (July) 1947

Calibration of Rayleigh Refractometers Without Recourse to Gas Chambers. R. F. Stamm and J. J. Whalen.—p. 203.
Determination of Halogenated Organic Vapors in Air by Adsorption on Specially Prepared Activated Charcoal and Preparation of Charcoal. C. E. Danner and J. Goldenson.—p. 218.
Selenium Fume Exposure. M. Clinton Jr.—p. 225.
Idiopathic Thrombocytopenic Purpura in Woman with Prolonged Exposure to Benzol. W. T. Vaughan Jr. and C. A. Finch.—p. 227.
Colorimetric Determination of Carbon Tetrachloride Using Modified Fujiwara Reaction. G. W. Rogers and K. K. Kay.—p. 229.
Comparative Chronic Toxicity of Diethylene Glycol Monoethyl Ether (Carbitol) and Some Related Glycols: Results of Continued Drinking and Feeding. P. J. Hanzlik, W. S. Lawrence and G. L. Laqueur.—p. 233.
Conversion of Silica During Ignition: Possible Source of Error in Analysis of Powdered Samples. D. A. Bailey.—p. 242.
Effect of Portland Cement Dust on Lungs with Special Reference to Susceptibility to Lobar Pneumonia: Animal Experiments. Anna M. Baetjer.—p. 250.
Influence of Calcium Carbonate on Settling Characteristics of Silica Dust. M. W. First and L. Silverman.—p. 259.
Appraising Exposures to Silica Dust. F. R. Holden, W. C. L. Hemeon and E. C. Hyatt.—p. 265.
Penetration of Airborne Particulates Through Human Nose. H. D. Landahl and S. Black.—p. 269.

Journal-Lancet, Minneapolis

67:263-286 (July) 1947

Carcinoma of the Colon. W. A. Fansler.—p. 263.
Football Injuries: Ten Year Review of Football Injuries at Princeton University. H. R. McPhee.—p. 267.
Gout: Based on a Five Year Study of 1,500 Arthritic Patients. H. A. Nissen.—p. 269.
*Is Immunization of Student Nurses Against Scarlet Fever Justified? Ramona L. Todd.—p. 271.
Successful Nephrectomy in a 3 Day Old Infant. R. E. Brogan.—p. 274.

Immunization of Student Nurses Against Scarlet Fever.—According to Todd two objections are commonly made to the administration of materials designed to produce resistance to scarlet fever: (1) the frequency of the occurrence of generalized reactions and (2) the belief that the immunity produced is only against the toxin and does not necessarily afford protection from bacterial invasion of the streptococcus causing the disease. The author investigated the experience with scarlet fever immunization procedures in student nurses at the University of Minnesota. Of 540 student nurses 208, or 38.51 per cent, had positive Dick tests on admission to the School of Nursing. Of the whole group 96 gave a history of having had scarlet fever; 11 of these had positive reactions to the Dick test. There were 142 students who received scarlet fever toxin inoculations and who were studied and interviewed regarding generalized reactions. Of these, 90 had generalized reactions. A total of 108.5 days of school was lost because of reactions, the range being 0.5 to 6 days. The most frequent reaction symptoms were nausea, vomiting, fever, general malaise and headache. About one fifth of the students who received five scarlet fever inoculations still had positive Dick tests six to twelve months later. Because of the frequency of generalized reactions and the time lost from school due to such reactions, it is doubtful whether scarlet fever immunization procedures for student nurses are worth while.

Journal of Nat. Cancer Inst., Washington, D. C.

7:299-424 (April) 1947. Partial Index

National Cancer Policy. T. Parran.—p. 299.
*Observations on Gastric Atrophy After Liver Therapy. E. B. Benedict.—p. 321.
*Pernicious Anemia and Tumors of Stomach. L. G. Rigler and H. S. Kaplan.—p. 327.
Studies of Patients with Gastric Cancer. C. P. Rhoads.—p. 333.
Radical Surgical Treatment of Gastric Cancer. G. T. Pack.—p. 337.
Gastric (and Salivary) Excretion of Radioiodine in Man: Preliminary Report. L. Schiff, C. D. Stevens, W. E. Molle and others.—p. 349.
Concentration of Quinine in Gastrointestinal Cancers: Preliminary Report. F. E. Kelsey and A. Brunschwig.—p. 355.
*Cytology of Gastric Fluid in Diagnosis of Carcinoma of Stomach. G. N. Papanicolaou and W. A. Cooper.—p. 357.
New Technic for Studying Cytology of Gastric Aspirates in Man. F. Hollander, M. Hess and H. A. Sober.—p. 365.
Gastric Acidity Before and After Development of Carcinoma of the Stomach. M. W. Comfort and M. P. Kelsey.—p. 367.
Role of Cancer Prevention Clinics in Detection of Early Gastric Cancer. M. E. Dailey.—p. 375.
Attempt to Identify Likely Precursors of Gastric Cancer. D. State, R. L. Varco and O. H. Wangensteen.—p. 379.
Gastric Carcinoma: Can an Increased Diagnostic Accuracy Greatly Improve Survival Rates? F. E. Templeton.—p. 385.
Biologic Characteristics of Nonpalpable, Nonsymptomatic, Solitary Polyps of Rectum. Marie Ortmayer.—p. 387.
Criteria for Diagnosis of Malignancy in Rectal Polyps. W. Schiller.—p. 393.

Gastric Atrophy and Liver Therapy.—Benedict says that for a long time gastric atrophy had been considered to be an end stage of chronic gastritis and an irreversible process. Since 1935 several reports have appeared which indicate that atrophy and hypertrophy of the stomach tend to disappear following effective treatment of pernicious anemia. Two thousand gastroscopies have been reviewed. Gastric atrophy is a definite disease of the stomach. It may be in part the result of an inflammatory process or in part the result of a deficiency factor. The diagnosis of gastric atrophy during life can be made only by gastroscopy. Gastric atrophy may be localized or diffuse. As a localized process it may occur with ulcer or cancer or mixed with other types of acute superficial or chronic hypertrophic gastritis. As a diffuse process it may be idiopathic or occur in association with deficiency diseases, notably pernicious anemia. There is gastroscopic evidence that in some cases the gastric mucosa improves after prolonged, intensive liver therapy. The high incidence of stomach tumors in gastric atrophy is borne out in this series. It seems reasonable to assume that the maintenance of a normal healthy gastric mucosa is of some help in the prevention of tumors of the stomach. The question is raised whether a healthy gastric mucosa could be of protection against carcinoma elsewhere in the body.

Pernicious Anemia and Tumors of Stomach.—Rigler and Kaplan state that pernicious anemia and epithelial tumors of the stomach develop in the same person more often than would be expected on the basis of chance alone. Evidence pertaining to the nature of this relationship is still inconclusive but suggests that the two diseases are probably linked indirectly through the medium of some common factor. Among the possible factors are hereditary or constitutional tendencies, achlorhydria, gastritis and liver therapy. In contrast with the paucity of gastric tumors discovered in nonselective mass surveys, serial gastric examination of persons with pernicious anemia has yielded a very high incidence of benign and malignant epithelial tumors of the stomach. It is suggested that a search for other conditions etiologically related to or associated with gastric cancer is a necessary prerequisite to the establishment of practical selective surveys for the early detection of neoplasms of the stomach.

Cytology of Gastric Fluid in Diagnosis of Gastric Carcinoma.—Papanicolaou and his associates report studies on the diagnosis of cancer of the stomach by the cytologic technic. The study was conducted in the department of anatomy at Cornell Medical College and the department of surgery at the New York Hospital. The clinicians in the hospital submitted contents to the laboratory without accompanying clinical information. The specimens were obtained by emptying the fasting stomach with an ordinary Levine tube. An equal volume of 95 per cent alcohol was immediately added to the aspirated specimen, and this was sent to the laboratory. By this method 137 cases have been studied. Of the 27 patients having cancer, 10 gave false negatives, 7 suspected and 10 positive diagnoses. Three of the 10 cases that were missed proved to be scirrhous cancers. There seems little hope for the accuracy of this method in this type of tumor, for desquamated cells are likely to be scanty or totally absent. There were no false positive reports in the 110 patients who were free of cancer but there were 9 false suspected reports. The authors emphasize the preliminary nature of this work. There are many technical problems that remain to be studied. It is hoped that its accuracy and usefulness in clinical cases suspected of being gastric cancer will be increased.

Journal of Nervous and Mental Disease, New York

106:1-106 (July) 1947

Efficacy of Electroshock Therapy in Preventing or Shortening Hospitalization. E. F. Kerman.—p. 1.
Mad Doctors. A. E. Bennett.—p. 11.
Between Psychosis and Psychopathy. J. Kavka.—p. 19.
Malingering: Case Report—"Proof Positive." A. Kaplan.—p. 46.
Speech Disorders in World War II. W. G. Peacher.—p. 52.
Modified Technic for the Induction of Hypnosis. J. M. Schneck.—p. 77.

Ambulatory Electroshock.—The material on which Kerman bases his report is composed of 262 patients consecutively treated at his office on an ambulatory basis. Of this number 20 have been excluded from evaluation. Among the remaining 242 there were 152 with affective disorders and 77 with schizophrenia. The ambulatory electroshock treatment was of benefit to 191 and was ineffective in 51. Twenty-three of the 51 had discontinued electroshock treatments prematurely. Over 50 per cent of the patients, or 127, recovered. Fifteen patients required subsequent hospitalization. Electroshock therapy given at the psychiatrist's office frequently prevents hospitalization. Such avoidance of commitment is of real benefit to the patient.

J. of Pharmacology & Exper. Therap., Baltimore

90:95-180 (June) 1947

Effect of Metrazol on Electrical Excitability of Respiratory Center When Depressed by Phenobarbital. Maria I. Robert de Ramirez de Arellano.—p. 95.
Tracheal Chain: I. Preparation for Study of Antispasmodics, with Particular Reference to Bronchodilator Drugs. J. C. Castillo and E. J. de Beer.—p. 104.
Pharmacology of N-Alkyl Homologues of Epinephrine. A. M. Lands, V. L. Nash, H. M. McCarthy, H. R. Granger and B. L. Dertinger.—p. 110.
Some Pharmacologic Properties of Rutin. R. H. Wilson, T. G. Mortarotti and F. DeEds.—p. 120.
Action of Sulfhydryl Reagents on Isolated Frog Heart. R. Mendez and B. Peralta.—p. 128.
*Methionine Therapy in Experimental Liver Injury Produced by Carbon Tetrachloride. V. A. Drill and T. A. Loomis.—p. 138.
Metabolic Fate of Acetanilid and Other Aniline Derivatives: III. Role of p-Aminophenol in Production of Methemoglobinemia After Acetanilid. L. A. Greenberg and D. Lester.—p. 150.
Urinary and Fecal Excretion of Sulfanilamide Derivatives After Oral Administration to Rats. Elizabeth Taylor, F. H. Snyder and F. W. Oberst.—p. 154.
Protective Action of p-Aminobenzoic Acid Against Certain Bismuth Preparations. E. Voss and A. L. Tatum.—p. 161.
Pharmacologic Evaluation of Dihydroergotamine Methanesulfonate (D. H. E. 45). O. S. Orth and G. Ritchie.—p. 166.
Anomalous Distribution of Antimony in White Rats Following the Administration of Tartar Emetic. A. T. Ness, F. J. Brady, D. B. Cowie and A. H. Lawton.—p. 174.

Methionine Liver Injury Produced by Carbon Tetrachloride.—Drill and Loomis point out that although Miller and Whipple reported in 1942 that the toxicity of chloroform anesthesia for protein-depleted dogs was decreased by the administration of methionine, recent studies that they and others have made have not shown any protective effect of methionine against liver damage in dogs produced by carbon tetrachloride when a normal protein diet was fed. They decided to make a more exhaustive study in dogs of the therapeutic effect of methionine at different levels of protein intake. Three acute experiments with a normal protein diet (20 per cent and 41 per cent casein) and dose levels of 0.5 and 0.25 cc. of carbon tetrachloride per kilogram were performed. Supplements of methionine were without effect on the dye retention, serum phosphatase or pathologic changes in the liver. Methionine was also without effect in preventing or decreasing the degree of liver injury, both functional and histologic, in a chronic study on dogs receiving a normal protein intake (20 per cent casein) and 0.25 cc. of carbon tetrachloride per kilogram twice a week for sixty-six days. Supplements of methionine were also without effect on the liver injury produced by 0.125 cc. of carbon tetrachloride per kilogram in dogs receiving a low protein intake (8 per cent casein) for three and one-half or sixteen weeks, as judged by functional and pathologic changes in the liver. There is no evidence of a beneficial effect of methionine on liver injury produced by carbon tetrachloride when either normal or low protein intake is used.

Medical Annals of District of Columbia, Washington

16:355-412 (July) 1947

*Prefrontal Lobotomy: Indications and Contraindications. W. Freeman and J. W. Watts.—p. 355.
Psychosomatic Phase in Management of Diabetes Mellitus in Adolescents and Young Adults. S. Benjamin.—p. 361.
Common Ocular Affections of Childhood. F. D. Costenbader.—p. 366.
Headache—Mechanisms, Differential Diagnosis and Treatment. P. Chodoff and L. S. Blumenthal.—p. 372.

Prefrontal Lobotomy: Indications and Contraindications.—On the basis of observations in 450 cases of prefrontal lobotomy followed for a period of several months to more than ten years Freeman and Watts have developed some ideas regarding indications and contraindications. The principal phenomenon on which the prognosis is based is the severity of the emotional response to abnormal ideas. When the effective component is strong there is a good chance of success; when it is weak, failure is likely. The attitude of the family toward the patient is a strong factor in his recovery to an adequate social existence. Age, duration of psychosis, type of psychosis and associated physical disease are of lesser importance. Cruelty, avoidance of responsibility and flight into alcohol before the development of the psychosis are contraindications. Response to shock therapy is not a reliable guide, and this form of treatment can be used to the detriment of the patient.

Military Surgeon, Washington, D. C.

101:1-98 (July) 1947. Partial Index

*Medical Report of Bari Harbor Mustard Casualties. S. F. Alexander.—p. 1.
Joining the Navy Medicos. L. W. Johnson.—p. 17.
Hyperpyrexia as Adjunct to Chemotherapy. C. Ferguson and M. Buchholtz.—p. 20.
Arteriovenous Aneurysm of Axillary Artery and Vein Caused by Gunshot Wound: Report of Unusual Case. M. B. Shpiner.—p. 23.
Problem in Clinical Photography. H. F. A. Long.—p. 27.
Sanitary Corps in Forward Areas. L. K. Clark.—p. 32.
Sanitary Engineering in European Theater of Operations. R. S. Cleland.—p. 36.
Entomologic Service in the Army. R. W. Bunn.—p. 40.
Isolation and Identification of Clostridia in the Field. R. E. Feeney.—p. 50.
Hospital Stay Can be Pleasant for Tuberculosis Patient. Harriet Larrabee.—p. 56.
Medical Men Who Were Signers of the Declaration of Independence of the United States. L. H. Roddis.—p. 62.

Bari Harbor Mustard Gas Casualties.—In December 1943, after the Allies had captured the southern portion of Italy and the port of Bari was being exploited as a major supply point for the drive north, German planes raided the harbor of Bari. Ammunition ships and tankers in the harbor were hit. These blew up, setting fire to other vessels and covering a large expanse of water with oil and gasoline. A ship loaded with approximately 100 tons of mustard gas and a large quantity of high explosive munitions was hit and exploded, the explosion disseminating the mustard gas. The 617 mustard gas casualties that occurred at this time were the only large scale group of mustard gas casualties seen in the war. There were 83 fatalities among the 617 casualties. The deaths were due primarily to exposure to a mustard in oil solution. Unusual hemodynamic changes and shock constituted the dominant initial picture. Blast injuries of sublethal severity were an important pulmonary complication, on which the superimposition of exposure to relatively mild vapor inhalation proved unduly serious and fatal. Systemic effects were severe and of greater significance than has been associated with mustard burns in the past. Many questions referable to changes in the liver, kidney and hemopoietic system remain unexplained. The type of casualty described is not likely to be reproduced to this degree in the tactical employment of mustard if the opportunity for prolonged absorption is obviated. The definitive treatment of mustard casualties proved discouraging.

Nebraska State Medical Journal, Lincoln

32:257-300 (July) 1947

Congestive Heart Failure. O. A. Kostal.—p. 259.
Scalenus Anticus Syndrome. A. C. Johnson.—p. 264.
Management of Urinary Tract Emergencies by General Practitioner. L. W. Lee and E. Davis.—p. 268.
Dilantin in Treatment of Epilepsy. H. A. Wigton.—p. 272.
Aminophylline in Treatment of Asthma. R. J. Wyrens.—p. 273.
Hytakerol in Treatment of Hypoparathyroid Disease. M. Beber.—p. 275.
Demerol as an Analgesic. B. Slutzky.—p. 277.
Laboratory Aspect of Brucellosis. W. E. [illegible].—p. 280.

32:301-340 (Aug.) 1947

Differential Diagnosis of Mental Deficiency in Infants. A. L. Gesell.—p. 304.
Dermatologic Reactions to Drugs and Antibiotics. D. J. Wilson.—p. 308.
Primary Carcinoma of Lung. F. L. Simonds and L. Anderson.—p. 311.
Laboratory Aids in Diagnosis and Prevention of Severe Blood Transfusion Reactions. M. Lev.—p. 316.
Hyperparathyroidism Due to Adenoma of Parathyroid Gland: Repotr of 2 Cases. J. R. Schenken.—p. 320.

New England Journal of Medicine, Boston

237:39-70 (July 10) 1947

*Total Gastrectomy with Particular Reference to Closed (Aseptic) Esophagojejunostomy. R. H. Smithwick.—p. 39.
Effect of Large Dosages of Irradiation on Gastric Acidity. I. B. Brick.—p. 48.
Paralysis of Abducens Nerve Following Spinal Anesthesia: Report of a Case. A. T. Rose and S. Pritzker.—p. 52.
Comparison of Value of the Rectal Swab and Fecal Specimen in Culturing Stools. W. J. H. Fischer Jr.—p. 53.
Gynecology: The Vaginal Smear. H. Ulfelder and J. V. Meigs.—p. 54.
Amyloid Goiter.—p. 57.
Choledocholithiasis, with Obstruction of Common Duct Cholangitis, with Formation of Small Hepatic Abscesses.—p. 60.

237:71-110 (July 17) 1947

Medical Group Practice in the United States. I. Introduction. G. H. Hunt.—p. 71.
Volvulus of Cecum and Ascending Colon. E. I. Young, H. R. Morrison and W. E. Wilson Jr.—p. 78.
Carcinoma of the Islets of Langerhans with Hyperinsulinism: Report of a Case. R. Sanchez-Ubeda and E. A. Carr Jr.—p. 87.
Endoscopy, E. B. Benedict.—p. 92.
Chronic Cholecystitis; Cholelithiasis; Choledocholithiasis; Adenocarcinoma of Ampulla of Vater.—p. 99.
Malignant Lymphoma, Lymphoblastic Type, Involving Small Bowel, Appendix, Gallbladder, 'Liver, Mediastinum, Retroperitoneal Tissues and Bone Marrow.—p. 102.

Total Gastrectomy.—Smithwick explains that the earliest symptoms of carcinoma of the stomach are often mild and insidious and may consist of nothing more than indigestion, loss of appetite or easy fatigability. There is a great need for earlier diagnosis and operation if the survival rates are to be improved. Carcinoma of the stomach is responsible for more deaths per year than cancer of any other organ and for approximately 30 per cent of the total annual cancer mortality. Because of the recent decrease in operative mortality following total gastrectomy, it seems proper to utilize this operation somewhat more frequently, particularly in cases in which a lesser procedure may jeopardize the chance for cure because of an inadequate margin of safety beyond the gross limits of disease. A closed (aseptic) method for esophagojejunostomy is described. This technic of anastomosis may further reduce the operative mortality by minimizing the hazard of peritonitis due to local contamination. The procedure has in other respects been as satisfactory as open methods of suture and has been found useful in all portions of the gastrointestinal tract. Two patients whose operations are described are living and well after five years and two months and ten and a half years respectively following total gastrectomy for carcinoma. The latter appears to be the longest recorded survival following total gastrectomy for carcinoma.

Surgery, St. Louis

22:1-160 (July) 1947

Anatomic Variations of Vagus Nerves: Significance in Vagus Neurectomy. J. A. Chamberlin and T. Winship.—p. 1.
Surgery in Radiation Injury of Stomach. R. F. Bowers and I. B. Brick.—p. 20.
Cholecystectomy and Partial Hepatectomy for Carcinoma of Gallbladder with Local Liver Extension. W. Sheinfeld.—p. 48.
*Carotid Sinus Syndrome: Surgical Treatment. R. B. Cattell and M. L. Welch.—p. 59.
*Treatment of Causalgia Arising from Gunshot Wounds of Peripheral Nerves. N. E. Freeman.—p. 68.
Variations in Syndrome of Ruptured Intervertebral Disk in Lumbar Region. F. V. Kristoff and G. L. Odom.—p. 83
Modification of Roux Technic for Antethoracic Esophageal Reconstruction: Anastomosis of Mesenteric and Internal Mammary Blood Vessels. W. P. Longmire Jr.—p. 94.
*Use of Testosterone Propionate in Treatment of Advanced Carcinoma of Breast: II. Treatment of Osseous Metastases. J. B. Herrmann, F. E. Adair and Helen Q. Woodard.—p. 101.
Alkaptonuric Arthritis: Cause for Free Intra-Articular Bodies. C. J. Sutro and M. E. Anderson.—p. 120.
Arteriosclerotic Ischemic Necrosis of Lower Extremities. W. D. Holden.—p. 125.
A Simple Procedure for Controlled Administration of Intravenous Fluids. Alice Lowell and A. Cournand.—p. 129.
Absorbable Fibrin Tubes for Vein Anastomoses. O. Swenson and R. E. Gross.—p. 137.
Self-Retaining Retractor for Hemilaminectomy. J. A. Colclough.—p. 144.
Vascular System of Long Bones of Rat.—p. 146.

Carotid Sinus Syndrome.—According to Cattell and Welch the carotid sinus syndrome occurs as the result of a hypersensitive state of the carotid sinus reflex. The first or vagal type of carotid sinus reflex is characterized by bradycardia, asystole, cardiac arrhythmia, hypotension and cerebral anoxemia which may lead to convulsions and unconsciousness. The second or depressor type is characterized mainly by vasodilatation and a fall in blood pressure. The third or cerebral type is characterized by sudden unconsciousness with no change in pulse rate or blood pressure. The second type is least common and usually accompanies one of the other two types. The diagnosis of hyperactive carotid sinus is made from the history and by inducing an attack of syncope by making digital pressure over the carotid sinus with the patient in the upright position. Patients in whom the symptoms are mild and the attacks occur infrequently may require nothing but reassurance. If possible, fatigue, worry and emotional upsets should be eliminated. The patients should not turn the head quickly. Surgical treatment is indicated in patients in whom the symptoms are severe and incapacitating, in those in whom medical treatment has been ineffective and in those who have the mixed or the cerebral type of response. The authors report 3 cases. Their operation consists in stripping the common, internal and external carotid arteries at the bifurcation, sectioning the carotid sinus "nerves" and removing the intercarotid tissue. The patient is allowed out of bed on the second postoperative day and may be discharged any time thereafter.

Treatment of Causalgia Arising from Gunshot Wounds.—Freeman says that the diagnosis of causalgia was made on the basis of the relief of pain by paravertebral injection of procaine in 114 Chinese casualties selected from 2,167 cases of gunshot wound of the extremities. The causalgia was severe in 20 of these cases. Sympathetic block by paravertebral injection of procaine produced permanent relief only in mild cases. Partial recurrence of pain was noted in 4 of 6 patients following preganglionic sympathectomy or ganglionectomy. Ganglionectomy combined with periarterial sympathectomy of the subclavian artery gave complete relief of pain in 7 cases of moderately severe and severe causalgia of the upper extremity. In the long-standing cases of causalgia, even though the pain was relieved the functional results were poor because of secondary fibrotic changes in the soft tissue of the hand. Early relief of pain is essential in order to prevent the development of soft tissue changes. This relief can best be obtained by early reparative surgery followed, when necessary, by paravertebral injection of procaine; this was proved in 4 cases. Radical sympathectomy should be reserved for patients in whom it is impossible to obtain clean healing of wounds which involve the nerves or in whom the pain persists.

Testosterone Propionate in Advanced Carcinoma of Breast.—Since their preliminary report on the use of testosterone propionate in advanced carcinoma of the female breast, Herrmann and his associates have treated 11 additional cases with osseous metastases. With 3 exceptions they were treated exclusively with testosterone propionate administered intramuscularly. The exceptions were patients in whom previous irradiation of osseous metastases had failed to control the pain. These patients improved with subsequent androgen therapy. Symptomatic improvement was manifested by 8 patients within two weeks after onset of therapy. The bone lesions remained quiescent for a variable time after the androgen therapy was terminated. When pain recurred it could be controlled by additional androgen therapy. It appears that in many cases a favorable status can be maintained until pulmonary or liver metastases develop. When this occurs the patient usually dies within a relatively short time despite the continued administration of androgen. The favorable effects on the bone metastases in the present series have been obtained with smaller amounts of testosterone propionate than were used in cases previously reported. The effective dosages were 100 and 200 mg. biweekly or 100 mg. triweekly. The androgen induced amenorrhea, but the menses returned after the treatment was stopped. One patient was asymptomatic as long as she was kept amenorrheic by testosterone propionate, but she developed pain in the metastatic area when the androgen was withdrawn and the menses returned. Facial hirsutism, deepening of the voice and acne were undesirable sequels. An increase in libido was noted in many patients. All patients gained in weight. The authors conclude that testosterone is of value in osseous metastases of breast carcinoma.

Tennessee State Medical Assn. Journal, Nashville

40:205-240 (July) 1947

Diagnosis and Treatment of Meningitis in Children. A. Levinson. —p. 205.
Limitations and Indications of Surgery and Radiation Therapy for Cancer of Breast. U. V. Portmann.—p. 211.
Diabetes Mellitus—Review of Progress. A. Weinstein.—p. 220.

Virginia Medical Monthly, Richmond

74:289-338 (July) 1947

Coseasonal Treatment of Hay Fever. J. L. Guerrant and O. Swineford Jr.—p. 289.
Present Status of Shock Therapy. R. F. Gayle Jr. and C. L. Neale. —p. 294.
Penicillin in Treatment of Lung Abscess in Infants and Children. G. A. Welchons and E. L. Kendig Jr.—p. 298.
Severe and Fatal Rheumatic Fever with Pancarditis in Virginia. P. D. Camp and L. Calvin.—p. 304.
*Use of Pyribenzamine in Erythema Nodosum. C. P. Parker Jr., J. L. Chitwood and H. St. George Tucker Jr.—p. 317.
Interesting Features of Endocrine and Metabolic Disturbances: Special Reference to the Skin. W. S. Sloan.—p. 319.
Treatment of Syphilis. R. Kimbrough.—p. 321.

Pyribenzamine in Erythema Nodosum.—Parker and his associates obtained favorable results with "pyribenzamine" in 2 cases of erythema nodosum. In both cases lesions appeared to be erythema nodosum. In 1 the biopsy specimen was compatible with periarteritis nodosa, but there was no other clinical or laboratory evidence of periarteritis except for the skin lesions. The lesions disappeared rapidly in both cases when "pyribenzamine" was given. Such rapid improvement has not been seen with bed rest alone or with other forms of therapy.

Yale Journal of Biology and Medicine, New Haven

19:801-908 (May) 1947

State of Pathology in British Colonies of North America. E. B. Krumbhaar.—p. 801.
Principles of Gene Distribution in Human Populations. L. H. Snyder. —p. 817.
Action of Glycine on Bacterial Suspensions. P. B. Cowles.—p. 835.
Infectious Mononucleosis at New Haven Hospital, 1921-1946. H. T. Gardner and J. R. Paul.—p. 839.
Fungistatic and Fungicidal Effects of Fatty Acids on Species of Trichophyton. E. Grunberg.—p. 855.
Acute Osteomyelitis of Maxilla in a Newborn: Report of Case Successfully Treated with Penicillin and Sulfadiazine. D. L. Dunphy and J. P. Frazer.—p. 877.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single-case reports and trials of new drugs are usually omitted.

Archives of Disease in Childhood, London

22:65-128 (June) 1947

*Icterus Neonatorum: Incidence and Cause. L. Findlay, G. Higgins and Margaret W. Stanier.—p. 65.
*Review of 112 Cases of Congenital Hypertrophic Pyloric Stenosis. R. McLaren Todd.—p. 75.
The Deposed Child. R. Meyer.—p. 86.
Empyema Thoracis in Infants and Children. A. E. Chaplin.—p. 91.
Suggestions and Demonstration Plans for Hospitals for Sick Children. J. Crooks and S. E. T. Cusdin.—p. 106.

Incidence and Cause of Icterus Neonatorum.—Fetal blood was collected from the umbilical cord before pulsation had ceased from the umbilical vein by venipuncture, and from the artery after cutting but before ligation. Children's blood was obtained by venipuncture of a scalp vein or by incision of the skin of the heel. Diagnosis of icterus neonatorum was made on the basis of hyperbilirubinemia in the cord blood or postnatal blood of an infant otherwise normal. Higgins and Stanier found that the incidence of icterus neonatorum, as judged by hyperbilirubinemia of the cord blood or postnatal blood, was 81 per cent. There is a greater chance of a severe and prolonged hyperbilirubinemia in a premature than in a mature infant. The view that the condition results from excessive hemolysis in early postnatal life is rejected on the basis of hematologic observations. Evidence derived from studies of the plasma proteins and Takata-Ara reactions is not conclusive. Fecal bilirubin studies support the view that icterus neonatorum is due to hepatic immaturity.

Congenital Hypertrophic Pyloric Stenosis. — Todd reviewed 112 cases of congenital stenosis. Diagnosis was made on the following evidence: (1) history of projectile vomiting, constipation and, usually, loss of weight; (2) visible gastric peristalsis; (3) palpable pyloric tumor. Confirmatory evidence in the form of barium roentgen examination was only undertaken in the year 1938 (8 cases); in the remaining 104 cases the presence of a palpable pyloric tumor was taken as evidence of the disease. Two series are differentiated in these medically treated cases of congenital hypertrophic pyloric stenosis. Series *A* comprises 40 consecutive cases, with 2 deaths; series *B* comprises 72 cases treated at the same hospital over an eight year period, with 10 deaths. The cases in series *A* were followed up clinically and radiologically. The subsequent physical and mental development of the patients was not affected by the pyloric stenosis, but the delay in emptying time of the stomach when seen at the follow-up examination was proportional to the severity of the condition as judged by the length of hospital treatment. The cases in series *B* were followed up clinically, and some were submitted to radiologic examination. The results tend to confirm those of series A. The author thinks that medical treatment should be the routine method unless the patient is grossly dehydrated. Surgical treatment should be undertaken if medical treatment is ineffective after a seven day trial. Surgical treatment is indicated in patients who are grossly dehydrated when first seen, or in whom the birth weight was below 6½ pounds (2,950 Gm.). Surgical treatment is contraindicated in infected patients because of the risk of fatal gastroenteritis.

British Journal of Ophthalmology, London

31:385-448 (July) 1947

Familial Cataract with Extensive Pedigree Chart. I. L. Johnstone. —p. 385.
Case of Recurrent Aphthous Uveitis with Associated Ulcus Vulvae Acutum (Lipschütz). A. Rugg-Gunn.—p. 396.
Further Experience with Amniotic Membrane Grafts in Caustic Burns of Eye. A. Sorsby, Joan Haythorne and H. Reed.—p. 409.
Visual Diagnosis of Eye Diseases by Means of Infra-Red Radiation. A. Vaško and M. Peleška.—p. 419.
Reticuloendothelial System of Cornea. T. Krwawicz.—p. 421
Ophthalmic Calculations by "Dam" Method. J. I. Pascal.—p. 424.
Note on Position of Eye in Third Nerve Palsy. E. Wolff and Heffernan. —p. 427.
Waren Tay-Sachs Disease in Chinese Infant. G. Haridas.—p. 428.
Technical Improvements in Diathermy Operation for Detachment of Retina. A. Kettesy.—p. 436.

British Journal of Surgery, Bristol

34:333-444 (April) 1947

Injuries of Peripheral Nerves in Two World Wars. W. R. Bristow.—p. 333.

Penicillin Therapy in Late Infected Compound Fractures from Burma. H. R. H. Harley, J. H. Bowie and M. D. Botcar.—p. 348.

*Partial Gastrectomy for Simple Ulcer: Review of End Results of 132 Cases, with Criticism of Polya Operation. A. B. Watson.—p. 353.

Parasympathetic Supply of Distal Colon. J. Lannon and Elizabeth Weller.—p. 373.

*Statistical Study of 1,405 Cases of Cancer of Stomach. W. L. Harnett.—p. 379.

Lesion of Intervertebral Disk Caused by Lumbar Puncture. A. H. Baker.—p. 385.

Report on 4 Cases of Congenital Genu Recurvatum Occurring in One Family. A. L. McFarlane.—p. 388.

*Surgical Pursuit and Removal of Metallic Foreign Body from Systemic Venous Circulation. W. W. Davey and G. E. Parker.—p. 392.

Elimination of "Apparatus Inertia" in Treatment of Fractures. G. F. Dommisse and E. J. Nangle.—p. 395.

Solitary Ectopic Pelvic Kidney with Reports of [illegible] Further Cases. H. G. Hanley and W. A. Steel.—p. 402.

Survey of Incidence of Inguinal Hernia in Different Racial Groups. A. I. L. Maitland.—p. 408.

Bone Abscess from Human Bite: Report of Case. A. T. Andreasen.—p. 411.

Ligature of Aortic Arch in Neck. T. E. D. Beavan and L. Fatti.—p. 414.

*Granuloma of Fallopian Tube Due to Surgical Glove Talc: Silicious Granuloma. G. B. S. Roberts.—p. 417.

Operation for Nerve Pedicle Grafting: Preliminary Communication. F. G. St. Clair Strange.—p. 423.

Partial Gastrectomy for Simple Ulcer.—In the 132 cases reviewed by Watson all patients were subjected to partial gastrectomy by the Billroth II, Mikulicz, Kronlein, Hofmeister, Reichel or Polya modification. One hundred and twenty-nine of the patients were interviewed; 3 replied by letter. The general impression gained from these patients is that partial gastrectomy is definitely worth while. There is still a residuum of cases in which patients are not improved after this operation. Some suffer intensely from the postcibal syndrome. Others experience recurrent ulceration. The amount of stomach to be removed should not be less than 60 per cent. The problem of the length of the loop needs further investigation clinically, but there is evidence that the shorter the loop, the greater the safety from ulceration. The operation of pyloric exclusion even in its modern form is still not free from criticism from the point of view of postoperative acidity. Anemia has long been held up as a major complication after partial gastrectomy, but the results in this series have reduced this to its correct place of minor importance.

Study of 1,405 Cases of Gastric Cancer.—Harnett reviews observations on 1,405 patients with cancer of the stomach treated in London hospitals during 1938 and 1939. The operability rate was 49.2 per cent and the resectability rate 17.3 per cent. The operative mortality for all radical operations averaged 32.9 per cent, ranging from 25.4 per cent for the Polya method of partial gastrectomy to 90 per cent for total gastrectomy. The survival rate for all radical operations averaged 23.1 per cent of traced cases after excluding operative fatalities; it ranged from 21.5 per cent for the Polya method to 44.4 per cent for the Billroth I method. Age incidence, weight loss, frequency of lymph node metastases and other factors are analyzed and compared with similar figures from the Mayo Clinic. In the London series the patients were on the average older and the disease more advanced. Resection before the lymph nodes were involved gave 60 to 63 per cent of normal expectation of life over a five year period. After involvement of the lymph nodes resection gave only 40 to 43 per cent of normal life expectancy. The average for all patients, including those not treated, was 27.4 per cent of normal. Women showed the best survival rate.

Metallic Foreign Body in Systemic Venous Circulation.—The patient reported by Davey and Parker had sustained a shell wound in the left clavicular region. The fragment, which measured 1 by ¼ by ¼ inch (2.5 by 0.6 by 0.6 cm.), was lying in the lumen of the left innominate vein; it passed from there during operative intervention into the right auricle. During an attempt to remove it from the auricle, with the patient tilted in the reverse Trendelenburg position, it passed down the inferior vena cava to the right common iliac vein and was finally removed from the right internal iliac vein. As far as the authors know, such a surgical adventure with the survival of the patient is unique in medical history.

Granuloma of Uterine Tube Due to Surgical Glove Talc.—Roberts describes 7 cases of silicious granuloma, 2 occurring in appendectomy scars and 5 in the fallopian tubes. All occurred in patients who had undergone a previous laparotomy. Microscopic examination revealed the presence in the lesions of doubly refractive material. This is considered to be talc deposited at the earlier operation. Several of the tubal lesions had been previously diagnosed as tuberculous. The question is raised whether some cases diagnosed as tuberculosis of the endometrium may not also be silicious granuloma. The presence of this type of lesion in the fallopian tube can cause pelvic pain and apparently sterility.

British Medical Journal, London

2:43-82 (July 12) 1947

*Choice of Drugs in Treatment of Duodenal Ulcer. A. H. Douthwaite.—p. 43.

Bornholm Disease in the Tropics. W. M. Jamieson and D. M. Prinsley.—p. 47.

Note on Causation of Sudden Death. R. Richards.—p. 51.

*Hemiplegia in Young Adults. G. J. Dixon.—p. 53.

Stress Fracture of a Metatarsal in a Young Child. L. D. Rutter.—p. 55.

Drugs in Treatment of Duodenial Ulcer.—Douthwaite states that the belladonna alkaloids have a pronounced effect on the motility of the gastrointestinal tract, especially in the direction of quelling abnormal contractions. Belladonna also influences the emptying rate of the stomach, but it does not influence acidity. To be effective the dose must be large enough to cause persistent dryness of the mouth. Vagotomy for duodenal ulcer is wholly unjustifiable, because belladonna can achieve all the good results claimed for such a surgical measure without the danger and permanent mutilation that it entails. Alkalis and other antacids have such a transient and variable effect on gastric acidity that they might well be discarded. If given they should be combined with olive oil. Their danger lies in masking the symptoms while the disease progresses. Continuous milk drip feeding often completely neutralizes free hydrochloric acid in the stomach. Cannabis indica is a valuable sedative in the acute phase. While experimental evidence favors harmlessness of smoking in chronic ulcer, many sufferers find that smoking produces or increases the ulcer pain; hence, it should be limited. Mustard, vinegar, curry and strong alcoholic drinks are chemical irritants and should be avoided.

Hemiplegia in Young Adults.—The 35 cases selected for study by Dixon were instances of unilateral pyramidal palsy seen in service personnel between the ages of 20 and 40. Nineteen of these patients had only minor degrees of hemiparesis, and in these a convincing cause was found. Seven of them were observed among 30 consecutive cases of cerebral tumor, 6 among 30 consecutive cases of disseminated sclerosis; others had hysteria or hemiparesis due to syringomyelia. In all these 19 patients the onset of paralysis was insidious. The remaining 16 patients with severer palsies all had a sudden stroke; thus it would seem that strokes resulting in permanent hemiplegia are not infrequent in young adult life. Although many of these patients showed evidence of cardiac disease likely to give rise to emboli, the majority had no such condition. It is suggested that this phenomenon might be due to either a venous thrombosis in the Rolandic system of veins or a hemorrhage, thrombosis or embolus in the cerebroarterial system. Sepsis in the jugular vascular bed, recent pulmonary disease and a tendency to abnormal elevation of the blood pressure are frequent associated observations.

J. Royal Inst. Public Health and Hygiene, London

10:181-214 (June) 1947

Some Possibilities in the Prevention of Disorders of Skin. B. Russell.—p. 191.

10:215-248 (July) 1947

Study of Epidemic Influenza. C. H. Stuart-Harris.—p. 222.

Lancet, London

2:41-78 (July 12) 1947

The Centaurs or Science and Rulers. W. Elliot.—p. 41.
Vagotomy for Peptic Ulcer. W. C. Thompson and A. H. James.—p. 44.
Treatment of Bladder After Suprapubic Cystostomy. P. W. Nathan.—p. 47.
Intravenous Administration of Iron. J. A. Nissim.—p. 49.
*Electro-Encephalographic Changes in Migraine: Review of 51 Cases D. J. Dow and C. W. M. Whitty.—p. 52.
Technic of Laryngeal Anesthesia. R. R. Macintosh.—p. 54.

Electro-Encephalographic Changes in Migraine.—Dow and Whitty point out that there is reason to expect electroencephalograms to exhibit a persistent generalized dysrhythmia more often in migrainous than in normal subjects, for migraine and epilepsy are genetically associated. The authors limited their inquiry to 51 cases of recurrent headache beginning before the age of 25, showing no irreversible neurologic change over a period of three years and having also at least three of the following five features: (1) a family history of similar benign headache; (2) a preheadache phase (aura) of transient visual-field change, dysphasia, paresthesias or weakness of monoplegic or hemiplegic distribution, or "psychic" changes of a stereotyped pattern; (3) hemicranial distribution at some stage in its course; (4) amelioration by vasoconstrictor drugs or by mechanical occlusion of the common carotid or its branches, and (5) association with nausea or vomiting. Electroencephalographic abnormalities were found in 30; generalized dysrhythmia in 14; symmetric bilateral episodic activity in 12, and a persistent focal abnormality in 4. Exaggeration of a previous abnormality was noted only at the period of aura or early headache in 5 of 8 cases and after the administration of ergotamine tartrate in 3 of 5 cases. The authors consider it worth while to make electroencephalographic studies in all cases of migraine, for accumulation of such records will aid in the understanding of constitutional dysrhythmias. If correctly timed, they may also help to correlate clinical observations with cerebral localization.

Thorax, London

2:65-120 (June) 1947

Arteriovenous Aneurysm on Pulmonary Artery Simulating Patent Ductus Arteriosus Botalli. G. Biorck and C. Crafoord.—p. 65.
Diseases of Lung Resulting from Occupational Dusts Other Than Silica. K. M. A. Perry.—p. 91.

Ann. Medicinae Internae Fenniae, Helsinki

36:1-208 (No. 1) 1947. Partial Index

So-Called Allergic Arthritis Symptoms. A. Appelgreen.—p. 5.
*Clinical Significance of Achlorhydria. P. Brummer.—p. 9.
*Significance of Renal Lesions in Hypertension. P. I. Halonen and E. Salomaa.—p. 26.
Electrocardiographic Studies in Addison's Disease. O. Helve.—p. 36.
Pathogenesis of Pernicious Tapeworm Anemia. M. Hirvonen.—p. 53.
Acute Diffuse Hepatic Necrosis Following Administration of Sulfathiazole. F. E. Krusius.—p. 83.
*Allergic Rhinitis and Bronchial Asthma in Bakers. E. Linko.—p. 98.
Temporal Arteritis. P. Peltola.—p. 112.
Effect of Digitalis, Strophanthin and Mercurial Diuretics on Blood Coagulation: Preliminary Report. S. Pere.—p. 124.
Exudative Pleurisy with Eosinophilia. M. Reinikainen.—p. 145.
Thrombocytopenic Purpura Produced by Quinidine. P. Soisalo.—p. 181.

Clinical Significance of Achlorhydria.—Brummer says that, although British and American authors no longer ascribe much clinical significance to achlorhydria, the establishment of the presence of achlorhydria is of undisputable value in the differential diagnosis between addisonian pernicious anemia and other macrocytic anemias. In Finland the physician may often have to differentiate addisonian pernicious anemia from macrocytic anemia due to fish tapeworm. If the presence of free hydrochloric acid can be established, addisonian pernicious anemia can be ruled out. On the other hand, the presence of achlorhydria makes a gastritis probable. Regarding the importance of hydrochloric acid for the digestive process, the author says that to some extent it promotes the digestion of protein but apparently is not indispensible to it. Achlorhydria is not accompanied with disturbances in the motility of the stomach and the intestine and also apparently not in the intestinal bacterial flora. Dyspeptic distress and a tendency to diarrhea are not more common in achlorhydric patients than in other persons. Therapeutic results supposedly obtained with hydrochloric acid do not prove that hydrochloric acid would be necessary for digestion, because the usual therapeutic doses of hydrochloric acid have no effect on the reaction of the stomach contents. Thus achlorhydria is of no great importance from the standpoint of digestion or as a cause of digestive disturbances.

Significance of Renal Lesions in Hypertension.—Halonen and Salomaa point out that the connection between renal lesions and hypertension is receiving more attention than usual in recent years. However, with the exception of glomerulonephritis and of nephrosclerosis, the causal relation of other renal diseases to hypertension is still obscure. In studies on 122 hypertensive patients at the Wihuri Research Institute they found that whereas previous infectious diseases apparently are of no importance in the etiology of hypertension, renal lesions are. They noticed the frequency of pregnancy toxemia and of operations in the pelvic cavity in the past history of hypertensive women. Various urologic changes, often quite slight, were observed in 43, or more than a third, of the patients with hypertension. The authors also collected 120 instances of unilateral renal lesion from postmortem material, and the blood pressure data of these cases were compared with those of 240 control cases of corresponding age. The incidence of hypertension was almost equally high in these two groups, and in 59 cases with bilateral renal lesions it was only slightly higher than in the controls.

Allergic Rhinitis and Bronchial Asthma in Bakers.—Linko studied 328 workers at bread factories, bakeries and pastry shops who came in contact with flour and found that 66, or about a fifth, had a clinical allergy to flour. Forty had nasal symptoms, 20 had both nasal and asthmatic symptoms and 6 had only symptoms of asthma. Considerable blood eosinophilia was observed in 19 of them, but there were no pathologic lymphocyte counts. Exposition tests were made in 50 cases, and 43 gave positive results. "Family predisposition" did not have a decisive influence in the genesis of allergy to flour. Symptoms developed on an average within eleven years from beginning work in a bakery, but in 32 cases signs had appeared before ten years had elapsed, which is earlier than is considered the average in other countries.

Arch. del Inst. de Cardiol. de México, México, D. F.

17:293-440 (June 30) 1947. Partial Index

*Cytologic Changes of Liver in Cardiac Insufficiency. I. Costero and R. Barroso-Moguel.—p. 337.

Cytologic Changes of Liver in Cardiac Insufficiency.—Costero and Barroso-Moguel studied livers obtained from necropsies on 500 persons with cardiac insufficiency in the Hospital General de México. They conclude that liver cells do not show any changes which could be related to the appearance and intensity of "regurgitation" jaundice. Jaundice in these patients is due to the collapse of the intratrabecular bile capillaries at the level of atrophic zones of the liver parenchyma. Stages through which atrophy of liver passes during congestive heart failure are (*a*) congestion of the central veins with intense anoxemia and moderate compression of liver cells, (*b*) hyperplasia of the reticular endothelium forming the wall of sinusoid blood capillaries, (*c*) elaboration of precollagenous (reticular, argyrophilic) fibers by this hyperplastic reticular endothelium, (*d*) intense compression of the trabeculae through spontaneous retraction of the recently formed fibers, (*e*) collapse of the intratrabecular bile capillary and compression atrophy of liver cells constricted by retractile fibers, (*f*) fragmentation of trabeculae into isolated cells and (*g*) reabsorption of the isolated atrophic cells. Jaundice appears only in those cardiac patients in whom these two fundamental conditions are fulfilled: (*a*) a sufficient number of intratrabecular bile capillaries have been collapsed, (*b*) the great part of the cells which evacuated their bile through the obstructed capillary retain their functional integrity. It seems that the atrophic liver cells retain their function even after their isolation in the fibrotic sites of the cardiac liver, if one takes into account the lack of cytologic alteration and the existence of bile pigment in their cytoplasm.

When the secreting pole of the compressed cells has ceased to exist, the bile and other products of cell activity are shed into the blood stream, causing the appearance of jaundice. The process of depolarization is extrinsic in nature, since the chain of phenomena which reverses the direction of the flow is not in the secreting cell but arises from the mechanical obstruction of its normal draining mechanism The *multiple miliary* hemorrhages commonly found in rheumatic disease as a consequence of the changes in the wall of small blood vessels are sometimes the cause of extrahepatic jaundice, as shown by the Van den Bergh test. This form of jaundice is independent of the anatomic changes present in the liver of these patients.

Archivos de Medicina Infantil, Havana

16:65-130 (April, May, June) 1947

*Nontuberculous Spontaneous Pneumothorax in Infants. R. Valdés Diaz and J. Diaz Rousselot.—p. 65.

Nontuberculous Spontaneous Pneumothorax. — Valdés Diaz and Diaz Rousselot observed the condition in 30 out of *10,830 infants treated in three Cuban clinics for infants.* Bronchopneumonia was the most frequent cause. Cough, pain and dyspnea were the early symptoms. Respiratory silence during auscultation, with absence of vocal fremitus and presence of tympany are of diagnostic value. The roentgenograms clarify the diagnosis and show the type and degree of collapse. The differential diagnosis from diseases which cause dyspnea is based on the clinical and x-ray examinations The most frequent and serious complications are mediastinal hernia and cardiovascular disorders. *The younger the infant, the more serious the prognosis.* Serial roentgenograms are of value in the diagnosis. The treatment consists of rest and the administration of oxygen, penicillin and sedatives. The authors report 63.3 per cent of recoveries.

Deutsche medizinische Wochenschrift, Stuttgart

72:209-240 (May 2) 1947. Partial Index

*Vaccine Therapy of Abdominal Typhoid, Particularly in Its Hemorrhagic Reactions. J. Hansen.—p. 209.
Skeletal Disease and Disturbance of Mineral Metabolism. H. Hellner. —p. 213.
*Tuberculosis in a City of the Ruhr Coal Mine Region: Changes in Epidemiology of Tuberculosis. A. Kupper.—p. 223.
*Nephrotic Hypertonic Syndrome in Diabetes Mellitus and Diabetic Glomerulosclerosis. W. Horst.—p. 225.
*Intestinal Necrosis: VI. Review of Literature on Disorders Resembling "Intestinal Necrosis." J. Edelhoff.—p. 228

Vaccine Treatment of Typhoid.—According to Hansen, Italian authors use a vaccine in the treatment of typhoid that is prepared by adding to a typhoid bouillon culture successively small quantities of blood from typhoid convalescents, so that in the end the blood amounts to 2 or 3 per cent of the culture material. This is then kept at 37 C. until the majority of bacilli have become lysed, which is indicated by the fact that the fluid portion of the material becomes clear. Phenol is added to the clear fluid, and the resulting substance is used as vaccine in that from 0.5 to 1 cc. is administered intravenously or 1 to 3 cc. intramuscularly or subcutaneously. Since the mortality in the 1945-1946 typhoid epidemic in Germany was somewhat higher than usual, Hansen decided to use the vaccine. The extremely unfavorable results obtained in the first 6 adults led to its abandonment. The administration of the vaccine was followed by sudden increase in temperature and by severe chills. Then the temperature decreased to subnormal values. Leukocytosis regularly resulted after the vaccine injection. The most catastrophic effect was the severe hemorrhagic reaction which developed in 4 of the 6 patients. There was prolonged hematemesis, bloody stools and pulmonary, renal and muscular hemorrhages. In 2 of the 4 patients the severe hemorrhagic reaction resulted in death, and the 2 who survived had a prolonged convalescence with severe anemia. In a fifth patient there existed indications of a hemorrhagic pulmonary infarct. Only 1 of the 6 patients was entirely free of signs of hemorrhagic reaction. The author suggests an allergic reaction, which is determined by the fact that the bacillus and its toxins have a damaging effect on the endothelium and the capillaries and that the bacillary antigen subsequently produced sensitization and shock.

Tuberculosis in a City of the Ruhr Coal Mining Region. —Küpper shows that in Gelsenkirchen, a city in which heavy industry and coal mining predominated and which had a population of 320,000 before the war and now has about 250,000, mortality and morbidity of open pulmonary tuberculosis have doubled. Tuberculosis of the lymph nodes and exudative pleurisy have *multiplied several times.*

Nephrotic Hypertonic Syndrome in Diabetes Mellitus and Diabetic Glomerulosclerosis.—Horst lists renal changes that are caused by or accompany diabetes mellitus, giving particular attention to the diabetic glomerulosclerosis described by Kimmelstiel and Wilson in 1936. In the course of six months Horst observed 3 cases in which the diagnosis of diabetic glomerulosclerosis was corroborated by necropsy. In 10 additional cases the diagnosis of glomerulosclerosis was made clinically. Five other diabetic patients, although they had exhibited no clinical signs of glomerulosclerosis, showed a mild form of this disorder at necropsy. The clinical symptoms of the disorder include albuminuria, hypertension, hypertonic retinitis and a nephrotic syndrome in the presence of diabetes mellitus. The course is malignant and advances in exacerbations. Death follows within months or several years. The terminal stage is characterized by renal and cardiac insufficiency or by encephalomalacia. The disease occurs almost exclusively in diabetic patients but is independent of the severity of diabetes, of a tendency of acidosis, of insulin medication and probably also of the duration of diabetes. Histologically the process is characterized by hyaline degeneration, capillary sclerosis, arteriosclerotic processes, degenerative conditions in the tubules and interstitial changes.

Review of Literature on Intestinal Necrosis. — In his study Edelhoff points out that the entity intestinal necrosis which is characterized by endemic occurrence, a definite symptomatology and a characteristic pathologic and microscopic picture has not been described previously in the surgical literature. Under the term "phlegmon of the intestinal wall" and related terms sporadic cases have been described which somewhat resemble this intestinal necrosis in a series of articles in recent issues of the *Deutsche medizinische Wochenschrift.* Crohn in 1932 separated from this group a definite entity which was designated as "regional ileitis" or "terminal ileitis." *The majority of the phlegmons of the intestinal wall are* inflammatory processes, which are the result of septic metastasization or of regionally advancing processes. It is noteworthy that these processes of the intestinal wall occur with greater frequency at times of deficient nutrition.

Nordisk Medicin, Gothenburg

34:1193-1240 (May 23) 1947. Partial Index

Present Day Anesthesia. T. Gordh.—p. 1193.
Treatment of Varicose Veins by "Combined Method." After-Examination of Results and Complications. C. Holm.—p. 1198.

Hospitalstidende

Scleroderma and Calcinosis Cutis with Esophageal Changes and Hepatic Injury. J. P. Nielsen.—p. 1203.
Infantile Paralysis: Treatment in Second Stage. H. Jacobsen.—p. 1205.
Thiouracil and Similar Substances in Treatment of Hyperthyreosis. C. Holten.—p. 1209.
*Surgical Treatment of Hyperthyroidism. F. Djørup.—p. 1214.

Hygiea

Supradiaphragmatic Bilateral Vagotomy in Gastric or Duodenal Ulcer. H. Wulff.—p. 1226.
Resection of Pancreas. E. Perman.—p. 1228.

Surgical Treatment of Hyperthyroidism.—Djørup says that preoperative iodine treatment, irrespective of the preparation used, has been the most important factor in bringing down the operative mortality from 10-15 per cent to 2-3 per cent. With the recent medical methods of examination thyrogenous heart disorders have now become an indication for operation and the results are good. Strumectomy for cardiac disturbances of nonthyrogenous origin gives poor and impermanent results. Special attention is directed to avoiding the symptomless paralysis of the recurrent nerve by more careful exposure of the upper pole of the gland and by ligation of the inferior thyroid artery. The recent surgical aids—blood transfusion, examinations of the water balance, intravenous injections and the new wound remedies—have contributed largely to the improvement in the operative results. New and effective means have been acquired for treatment of the formerly intractable lesion of the parathyroid gland.

Ophthalmologica, Basel

113:257-320 (May) 1947. **Partial Index**

Perimetric Charts in Equivalent Projection Allowing Planimetric Determination of Extension of Visual Field. J. ten Doesschate.—p. 257.
Rare Ulcers of Lacrimal Caruncle. M. Radnót.—p. 270.
Pathogenesis of Lesio Ganglii Fasciculi Optici, So-Called Retrobulbar Neuritis, with Toxins and Avitaminoses and Tabetic So-Called Primary Optic Atrophy. J. de Ruyter.—p. 276.
Course of Brightness of Positive After-Images. M. Pannevis.—p. 280.
*Pathogenesis of Pigmentary Retinitis. E. Redslob.—p. 290.

Pigmentary Retinitis.—Redslob reports pigmentary degeneration of the choroid and of the retina in a girl aged 12 years. An arterial spasm causing temporary blindness of six weeks' duration resulted from vaccination against smallpox at the age of 14 months. The choroid is considered to be the seat of proliferation of tissue associated with neoformation of vessels. This proliferation may be caused by an inflammatory process, and pigmentary retinitis may therefore be considered a form of chorioretinitis. The family history was negative for pigmentary retinitis. In cases of degeneration of the retinal pigment, two groups must be differentiated. The first group includes the independent forms, in which not heredity but injuries and infectious diseases may play an important part; the reported case of postvaccinal degeneration is an example. The second group includes cases in which heredity may be considered a pathogenic factor. Retinitis is associated with other morbid conditions dependent on the genes which influence not only the retinitis but also the neurovegetative centers of the mesencephalon, the hypophysis and other parts whose involvement may produce deafness and polydactylism. The autonomous types of pigmentary retinitis belong to the first group; those of the second group represent but one symptom of a larger syndrome. Very likely the two groups differ also in appearance and development.

Praxis, Bern

36:445-456 (June 19) 1947

*Streptomycin in Treatment of Tuberculous Meningitis. H. Wissler and M. Streit.—p. 445.
Delivery in Breech Presentation at Maternity Hospital in Geneva. A. Turrettini.—p. 447.
Characteristics of Arterial Tension in Course of Parathyroid Osteitis (Recklinghausen) and of Paget's Disease. M. Schachter.—p. 449.

Streptomycin Treatment of Tuberculous Meningitis.—Wissler and Streit report the case of a child aged 2½ years, whose mother had a severe case of open tuberculosis. When there developed in the child fever, stiffness of neck and changes in the cerebrospinal fluid, tuberculous meningitis was thought of and the diagnosis was later corroborated by animal experiments. Treatment with streptomycin was begun at once in the form of seven daily intramuscular injections. The total intramuscular daily dose was 525 mg., or 40 mg. per kilogram of body weight. Since only small quantities appeared in the cerebrospinal fluid, two intrathecal injections were also given; half of the 100 or 200 mg. dose was given in the morning into the cisterna, the other half in the evening into the lumbar region. The intrathecal treatment was continued for fifty-four days. The intramuscular injections were continued for twenty-five days. Since the cisternal punctures always resulted in several hours of somnolence and faintness, it was sometimes difficult to say what was caused by streptomycin and what by the meningitic process. The child gradually improved, but there is evidence of labyrinthine disturbances and other defects. The tuberculous meningitis or perhaps the streptomycin may cause permanent damage in the form of blindness, deafness, labyrinthine disturbances and defective intelligence. The authors regard the described patient as not yet definitely cured. The fact that the cell count in the cerebrospinal fluid is still increased makes caution necessary, and a relapse after several months is a possibility.

Presse Médicale, Paris

55:421-432 (June 21) 1947. **Partial Index**

*Electroencephalographic Study of Sensory Dominance of One Cerebral Hemisphere. L. Cornil and H. Gastaut.—p. 421.
Employment of Bacteriophage in Treatment of Bacillary Dysentery. J. Karpisek.—p. 422.

Sensory Dominance of One Cerebral Hemisphere.—Cornil and Gastaut studied the encephalograms of 120 adults and of 30 children between the ages of 5 and 12 years with regard to the sensitive-sensory dominance of one of the cerebral hemispheres. More than 50 per cent of the normal persons presented an asymmetry in the amplitude of the alpha rhythm, and the less ample rhythm was always located opposite to the half of the body used with preference, i. e. at the side of the dominant hemisphere. Blocking of the alpha rhythm by opening the eyes or by performing mental arithmetic caused a more complete attenuation of the alpha rhythm at the same side. Occipital rhythmic potential waves induced by intermittent rhythmic lighting of the retina were often asymmetrical, and the largest amplitude was always obtained at the side which at rest showed the less pronounced amplitude; the rhythm is in general of a larger amplitude and is more regular and more rhythmic on the dominant hemisphere than on the dominated one. It is suggested that there is a richer conveyance of sensory and particularly of visual messages on the side of the dominant hemisphere in relation to the other. The dominant cerebral hemisphere (the left side in the righthanded persons) "receives" more sensory messages, while it "conveys" more motor signals than the opposite side. The reaction of blocking the alpha rhythm, which in the course of mental effort is more important on the dominant hemisphere, proves that this hemisphere plays a predominant part in the process of application of the mind and probably in other processes of psychic life.

55:433-444 (June 28) 1947

*Treatment of Pelvic Infections of Genital Origin with Local Injections of Penicillin. A. Sicard and J. Arbid.—p. 433.
*Influence of Anatoxin Immunization on Mortality Rate of Diphtheria. A. Besson.—p. 433.
Experimental Treatment of Visual Disturbances Caused by Arsenical Trypanocides with Intravenous Procaine Hydrochloride. H. Lorofi. —p. 435.

Penicillin in Pelvic Infections of Genital Origin.—Twelve women between the ages of 27 and 38, 7 with pelvic peritonitis and 5 with pyosalpinx, were treated by Sicard and Arbid with five to ten local injections of 50,000 to 100,000 units of penicillin. Eight of the 12 were postabortal cases. The injections were made into the pouch of Douglas or into the lateral cul-de-sacs. There was a drop in temperature after the first injection. Patients who had been in bed for months recovered within two weeks. Previous treatment, consisting of Delbet vaccine, sulfonamide and general penicillin administration, was ineffective. Local penicillin therapy is recommended for cases of long continued pelvic peritonitis without suppuration and of pyosalpinx which is cooling slowly.

Anatoxin and Mortality Rate of Diphtheria.—Statistics presented by Besson for the period 1944 to 1946 show that in Paris 539 out of 3,374 patients with diphtheria were immunized with Ramon's anatoxin (diphtheria toxoid). Of the 3,374 patients 1,112 were 6 or less than 6 years old and 102 of these died; 618 were between the ages of 7 and 15 years and 13 of these died, and 1,644 were 16 years old or older and 38 of these died. Only 1 of the 539 immunized persons, a child less than 6 years old, died. The incidence of diphtheria was the lowest in the age groups between 7 and 15 years, although the school age has always been considered the classic period of diphtheria; it is also the period in which immunization is carried out on the largest scale. The conformity of these data with those reported from the health department of the city of New York and from Great Britain and Denmark is emphasized. The incidence of diphtheria was reduced considerably by systematic prophylactic immunization in many countries, and although immunization may not be considered a definite safeguard against diphtheria it is practically one against death from diphtheria provided treatment along classic lines, particularly intensive serum therapy, is instituted.

Book Notices

Surgery of the Hand. By R. M. Handfield-Jones, M.C., M.S., F.R.C.S. Second edition. Cloth. Price, $5.50. Pp. 161 with 101 illustrations. William Wood & Co., Mt. Royal & Guilford Aves., Baltimore 2, 1916.

The author states that this monograph is written primarily for general practitioners, industrial medical officers and house surgeons, and for that reason he has avoided overloading the pages with details of major surgical reconstructions and obscure diseases. He has carried out his task exceedingly well. The text is clear and concise, and except for a few minor details one would agree wholeheartedly with everything he says.

A chapter of introduction and discussion of general principles is followed by brief chapters on the distal phalanx (felon and paronychia), lymphangitis and a more extensive discussion of tendon sheath infections and infections of the palmar spaces. A brief chapter on complications and sequelae of hand infections is followed by a longer discussion of restoration of function. Section two, comprising one third of the volume, is devoted to injuries, congenital and acquired defects and tumors of the hand.

In the treatment of acute lymphangitis (p. 29) the author advises compression of the arm close to the axilla with a blood pressure cuff. "Compression is maintained for eight hours, released for one hour and then resumed for forty-eight hours. . . . A special nurse will be required to keep watch on the pressure reading of the sphygmomanometer." This method, often called Bier's passive hyperemia, seems both unphysiological and illogical. The author says that by this means time is given for the defense mechanism of the body to mobilize its resources instead of being submerged "by a 'knock-out' blow." It would seem much more logical to permit the excretory mechanism and the detoxifying mechanism of the body, which physiologists agree depends largely on the liver, to function as promptly and effectively as possible rather than to attempt to dam back bacterial toxins in tissues which are not functionally adapted to neutralize them. One wonders if the prestige of a distinguished name has not served to perpetuate in textbooks, if not in actual practice, a method of treatment which has little to recommend it.

A second principle which the author stresses is covering the infected hand and the injured hand with a bare minimum of dressings. He would abolish hot fomentations from the whole realm of surgery, and apply only small light dressings to an injured hand. ". . . retention of mass dressings can do much harm. Darkness and warm dampness encourage bacterial growth. . . ." (p. 119). It seems a little strange that a countryman of Gamgee and of the multitude of British surgeons who have emphasized the compression of injured and inflamed tissues to limit the pouring out of serum and exudate should ignore this important principle. One might well believe that if to the hand illustrated in figure 80, page 120, a compression bandage had been added, the obvious tension and swelling of fingers and metacarpus could have been avoided. That warm wet dressings are not always carefully applied and often are used for too long a time are not sound reasons for discarding an effective method of relieving pain and helping to localize infection.

The audience for whom this volume has been prepared can accept it with few reservations. It is filled with sound advice and it should help definitely to secure more effective and thoughtful care for patients with infection and injury of the hand.

Social Insurance Financing in Relation to Consumer Income and Expenditures. By S. J. Mushkin, Anne Scitovszky and Leila N. Small, Division of Finance and Economic Studies. U. S. Federal Security Agency, Social Security Board, Bureau Memorandum No. 63. Paper. Price, 45 cents. Pp. 155. Supt. of Doc., Government Printing Office, Washington 25, D. C., 1946.

This memorandum might be called a social insurance man's work sheet. It contains his assumptions, and his calculations of what would be the effects of social insurance in the United States in future years based on these assumptions. The authors have contributed a summary of economists' criticisms of social security during the thirties. They complain that in the prewar period critics of the social security program failed to distinguish between the actuarial aspects of social security funds and the total spending aspects. All this is included in part I.

Part II is devoted to a calculation of what will happen to social security funds in the hypothetical year 195x, under three different assumptions of degree of full employment, and a discussion of the problem of financing social security, as then amended, till the end of the century. These discussions deal with the relative rates of contributions and of benefit payments but also make carefully detailed calculations of effects on total spending, following the assumptions of Keynes. The author calculates that benefits will outrun contributions somewhere between 1975 and 1990, using several different assumptions.

Part III presents the problem of financing a full dress social security plan, as outlined in the 1943 and 1945 Wagner-Murray-Dingell plans. Methods followed are identical with those of section II. This section is particularly interesting for the inclusion, on pages 74 and 75, of tabular material comparing private expenditures for medical care before and after the institution of the complete social security coverage. In general, the material indicates vastly increased expenditures for groups whose incomes fall below $2,000 a year; no diminution for groups in higher incomes, although to these groups total costs will be higher because of addition of insurance charges to services they would purchase anyway. On page 81 is a table presenting the fiscal impact of this total coverage in the hypothetical year 195x.

Part IV presents alternative methods of approaching paying for social security; modification of pay roll contribution rates, tax bases and contributor shares.

An appendix on methodology completes the impression of the whole being a work sheet, the calculations based on hypothetical assumptions. Suggestions are made, for instance, concerning proper numerical values for the propensity to consume.

Diseases of the Chest with Emphasis on X-Ray Diagnosis. By Eli H. Rubin, M.D., F.A.C.P., F.C.C.P., Attending Physician, Division of Pulmonary Diseases, Montefiore Hospital and County Sanatorium, New York. The Principles of Surgical Treatment. By Morris Rubin, B.A., M.D. Cloth. Price, $12. Pp. 685, with 355 illustrations. W. B. Saunders Co., West Washington Square, Philadelphia 5, 1947.

This book contains a store of information about diseases of the chest. The illustrations, with twenty-four plates in color, were carefully chosen and are well reproduced. The book is composed of six sections. Section I contains four chapters in which fundamental material is presented on anatomy, the uses of the x-rays in examination, physiology, and symptoms and signs of pulmonary disease. The six chapters in section II deal with the pneumonias. All known forms are carefully considered and the latest diagnostic and therapeutic procedures are included. One chapter is devoted to sulfonamides and antibiotics.

The eight chapters in section III pertain to pulmonary tuberculosis. The procedures necessary to arrive at accurate diagnosis are discussed in considerable detail. All forms of treatment are brought to date, including recent advances in chemotherapy. The nine chapters in section IV are devoted to nontuberculous chronic pulmonary diseases of the lungs and bronchi. Cancer, bronchiectasis, bronchial asthma, pulmonary cystic disease and emphysema are well presented from all points of view. The great importance of bronchial obstruction is so recognized by the authors that two entire chapters are given over to this subject. Diseases of the mediastinum, diaphragm, pleura and heart-lung disease are presented in six chapters of section V. Two of these chapters deal with the mediastinum in a splendid manner.

The last four chapters of the book, constituting section VI, are devoted to the principles of surgical treatment of various chest diseases. This includes the surgery of empyema, lung abscess, bronchiectasis, cancer, tuberculosis and benign tumors. The management of chest injuries, including hemothorax, pneumothorax, crushing chest wounds and thoracoabdominal injuries are presented in the last chapter.

The book is designed for use by general practitioners, sanatorium physicians, and medical students and radiologists. From its title one might suspect overemphasis of x-rays in diagnosis. Actually, this is not true. While the x-rays are given their well deserved place, the relative values of other phases of the examination necessary for completing the diagnosis are well presented. This book can be highly recommended to all physicians in the groups for which it was written.

Hypnotism Today. By Leslie M. LeCron, B.A., and Jean Bordeaux, B.A., M.A., Ph.D. Foreword by Milton H. Erickson, M.D., Director of Psychiatric Research, Wayne County Hospital, Eloise, Michigan. Cloth. Price, $4. Pp. 278. Grune & Stratton, 443 Fourth Ave., New York 16, 1947.

Probably few leading psychiatrists today use or recommend the use of hypnosis as a psychotherapeutic technic. It is true, however, that dynamic psychiatry as now practiced owes its major development to the observations of Freud and other associated workers on hypnotized subjects. Posthypnotic suggestion made it possible for Freud to demonstrate the presence of the unconscious without any possibility of doubt. Working with hypnotic subjects, he was able to demonstrate also that it was possible to bring unconscious memories into consciousness. At the present time most psychiatrists believe that the use of sodium penthothal (or a similar drug) is just as efficacious as hypnotism and has the particular advantage of allowing for a transition period between unconsciousness and consciousness which is of great value in bridging this gap and makes it possible to combine during the same period the working through of material which was verbalized during the unconscious state. Grinker and Spiegel in Men Under Stress give a classic example of how valuable this procedure may be. The present volume fulfils its title in bringing to the reader the present status of hypnotism. LeCron and Bordeaux, who have had many years of experience, do an exceptionally good job of presenting the subject. The book has an excellent chapter relative to the history and background of hypnotism. The principles of suggestion, posthypnotic suggestion, autohypnosis and autosuggestion are clearly and concisely delineated. Part II, which is devoted to hypnotherapy, may precipitate considerable difference of opinion. However, every chapter is well worth the reader's time and thought. The book is well written. The references, bibliography and index offer a wealth of sound psychologic reading material for those who are seriously interested in the progress of modern psychiatry.

Food Inspection Notes: A Handbook for Students. By H. Hill, F.R.San.I., F.S.I.A., A.M.I.S.E., "Ollett" Gold Medallist, and E. Dodsworth, M.R.San.I., M.S.I.A., Chief Sanitary Inspector, Borough of Harrogate. Second edition. Fabrikoid. Price, 6s. Pp. 125. H. K. Lewis & Co. Ltd., 136 Gower St., London, W. C. 1, 1947.

The second edition of this little pocket size book follows four years after the first edition and constitutes a digest or summary of present day knowledge of foods and their inspection. About half of the book is devoted to meat inspection and the remainder to poultry, rabbits, game, fish, shellfish, milk, milk products, canned foods, other foods, food poisoning and food sampling. Dogmatic statements are made with reference to controversial issues. For example, acidophilus milk . . . "exerts a beneficial influence on digestive organs." The food poisoning portion of the book needs revision. The authors still accept the theory (for which proof is lacking) that Salmonella produces toxins which are heat stable and may give rise to food poisoning symptoms in man in the absence of living Salmonella organisms. This book contains much valuable information for health workers concerned with food inspection.

A Handbook on Diseases of Children Including Dietetics and the Common Fevers. By Bruce Williamson, M.D., F.R.C.P., Physician, Children's Dept., Royal Northern Hosp., London. Fifth edition. Cloth. Price, $4.50. Pp. 408, with 87 illustrations. Williams & Wilkins Company, Mount Royal and Guilford Aves., Baltimore 2, 1947.

While this little volume succeeds in covering a wide range of pediatric subjects, a single paragraph is allotted to the discussion of many important disorders. It is not sufficiently extensive to be used as a textbook in pediatrics. To the general practitioner who wishes to refresh his memory on the bare essentials of diagnosis and treatment of diseases of children this book will be found helpful.

The Development of Inhalation Anaesthesia with Special Reference to the Years 1846-1900. By Barbara M. Duncan, D.Phil. Cloth. Price, $12. Pp. 640, with 161 illustrations. Publications of the Wellcome Historical Medical Museum New Series, II. Published for the Museum by Oxford University Press, 114 Fifth Ave., New York 11; Amen House, Warwick Sq., London, E. C. 4, 1947.

This book aims to trace the beginnings and to follow the development of concepts and practices which have gone to the making of the science and art of inhalation anesthesia as it is today. The author has attempted to show how current beliefs and happenings which at first sight appear unconnected or only remotely connected with anesthesia affected its evolution during the period under review—chiefly the period between the winter of 1846 and the end of the year 1900. The book is illustrated adequately and is written from a considerably different point of view than most histories of anesthesia. It should be of great interest to persons concerned with medical history, especially that relating to anesthesia.

Psychological Disorders in Flying Personnel of the Royal Air Force Investigated During the War 1939-1945. By Air Vice-Marshal Sir Charles P. Symonds, K.B.E., C.B., M.D., and others. Air Ministry Air Publication 3139. Paper. Price, 7s. 6d. Pp. 344, with illustrations. His Majesty's Stationery Office, York House, Kingsway, London, W. C. 2, 1947.

This volume is a collection of papers published by the physicians who are particularly interested in psychologic problems in the Royal Air Force. Some of the papers are therefore dated as early as January 1942 and a few of them extend to 1944 and 1945. Practically every aspect of psychiatric work among air forces personnel is discussed, and the whole problem of neuroses in that service can be surveyed by reading this book. There may be minor points of disagreement, but the descriptions and conclusions are basically sound and may prove valuable to know for future wars.

Health and Rehabilitation Through Chest Training. By Samuel Delano, A.B., M.D. Cloth. Price, $2.50. Pp. 142, with illustrations. William-Frederick Press, 315 W. 35th St., New York 1, 1947.

Writing at age 86, Dr. Delano describes and illustrates his system of chest training developed over the last twenty-five years. He advocates a series of related exercises as a means of bringing about and maintaining a flexible chest, which, he contends, "is the master key to health." Advantages claimed for a flexible chest "perfectly under control" are an increased chest volume, an improved balance between the pulmonic and systemic circulations and increased respiratory and circulatory reserve. The first part of the book outlines the physiologic principles underlying the movements, while the second portion is devoted to a detailed description of the eighteen exercises. The "stunts" are carefully explained and illustrated with photographs of the author. In the remainder of the text the doctor's experience with pathologic cases is summarized. Dr. Delano is obviously an enthusiast and one who has made chest exercises his hobby. The claims he has made for the values in his prescribed movements both in health and in disease are considerably beyond those generally ascribed to such exercises. The presentation is, however, clear, concise and readable and is well worthy of study by those interested in the possibilities of such methods.

Principles of the Contact Lens. By H. Treissman, M.B., B.S., F.R.C.S. and E. A. Plaice. Cloth. Price 10s. 6d. Pp. 88, with 40 illustrations. Henry Kimpton, 25 Bloomsbury Way, London, W. C. 1, 1946.

Most of the material in this monograph on the theory, optics and fitting of contact glasses deals with the stock lenses, and since in the United States the molded, plastic lenses have almost entirely supplanted those made of glass, the book will probably find a small market. The most informative chapter for the average physician is that on indications for the use of contact lenses. The chapters on fitting and tolerance are of interest chiefly to an ophthalmologist. There are two pages about plastic lenses. The author concludes with brief remarks on alteration of refractive power, safety to the eye and instructions to the patient.

Leitfaden für Zuckerkranke. Von Dr. med. Georg R. Constam. Cloth. Price, 12.50 Swiss francs. Pp. 127, with 15 illustrations. Benno Schwabe & Co., Klosterberg 27, Basel, 1947.

This is a well arranged and clearly written manual for the diabetic patient. Relatively little space is given to theory as such. However, in the sections devoted to foods, food selection and diet, the use of insulin and the complications of diabetes, sufficient incidental background and explanation are included to inform the patient not only what is to be done but why it is done. The author's point of view as to diabetic theory and therapy is apparently very similar to that of the conservative school in this country.

Queries and Minor Notes

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically stated in the reply. Anonymous communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request

CIRRHOSIS OF THE LIVER

To the Editor:—**Please give me the geographic distribution of cirrhosis of the liver in the United States. Is the incidence of eclampsia common among patients with cirrhosis of the liver?**

M.D., Ohio.

Answer.—The mortality tables compiled by the United States Bureau of the Census furnish the most accurate information available on the geographic distribution of cirrhosis in this country. They show as has been recognized for many years that the disease is more commonly encountered in urban areas. Areas with large Italian or Oriental populations often show higher rates. The overall mortality rate for the disease was 8.6 per hundred thousand of population in 1940; the urban rate was 11.5 and the rural rate was 5.9. The urban rate for Ohio was 10.9; for rural Ohio, 7.1.

The 1942 mortality rates by groups of states are given in the following list:

New England states	11.7
Middle Atlantic states	12.5
East North Central states	10.1
West North Central states	7.2
South Atlantic states	5.9
East South Central states	4.5
West South Central states	5.1
Mountain states	7.0
Pacific states	17.8

States with a high mortality rate from the disease per hundred thousand of population include California (17.8), New York (13.3), Massachusetts (13.2) and District of Columbia (12.9). Much lower rates are encountered in the Carolinas (3.5), Alabama (3.7), North Dakota (4.1), Utah (4.2), Mississippi (4.1) and Texas (4.6).

More detailed information can be obtained from vital statistics reports which are published by the Department of Commerce.

As these vital statistics indicate, cirrhosis of the liver is a rare disease among women of child-bearing age. Statistics on the frequency of occurrence of eclampsia in cirrhosis have not been found. However, to judge from the gravity of infectious hepatitis in pregnant women, it would seem likely that a preexisting lesion of the liver would pursue an unfavorable course in the event of a coexisting pregnancy and that symptoms of hepatic insufficiency probably would ensue.

Conversely, it may be said that acute yellow atrophy of the liver may occur in eclampsia, and Eppinger has cited cases in which repeated toxemias with successive pregnancies have terminated in cirrhosis.

ADHESIONS IN PELVIS FOLLOWING IRRADIATION OF CERVIX FOR CANCER

To the Editor:—**Recently a patient who had had one radium treatment for cancer of the cervix died and an autopsy was performed. I was impressed by the large number of adhesions found in the pelvis. Some of these obstructed the ureters and caused a pyelonephritis to develop, which was the immediate cause of death. There was evidence of metastases to the walls of the ureter. Are massive adhesions a usual sequel from radium treatment for cancer of the cervix or a rare occurrence? In about what percentage of the cases does this sequel occur?**

William M. Bush, M.D., New York

Answer.—Adhesions in the pelvis are a rare complication of irradiation of cancer of the cervix. When adhesions are present they are usually due to previous inflammatory disease or to infection complicating the carcinoma and causing a pelvic peritonitis during the time of the treatment. Unusually heavy irradiation may cause injury to the viscera and in this way produce adhesions and permanent bowel injury.

In the case cited it would seem that the adhesions were a result of extension of the disease and that the ureteral obstruction was caused by direct invasion of the ureter by the carcinoma.

Definite statistics as to the occurrence of adhesions following irradiation are not available, but a recent study of 500 carcinomas of the cervix showed an incidence of less than 2 per cent.

RECURRENT ATTACKS OF PANCREATITIS

To the Editor:—**What is known about the treatment of recurring attacks of acute pancreatitis? A patient aged 25 had a cholecystostomy one year ago and since then has had repeated attacks of left upper quadrant abdominal pain. Blood amylase is 250 units during attacks. Cholecystogram shows a nonfunctioning gallbladder.**

Robert Srigley, M.D., Ardmore, Okla.

Answer.—Since disease of the biliary tract, especially that associated with cholelithiasis, is considered a highly significant factor in the production of acute pancreatitis, it would seem proper in a case like this to perform an exploratory operation on the gallbladder and biliary passages and to drain the common duct either by choledochoduodenostomy or by a T tube for such time as the surgical findings may dictate. If the gallbladder is diseased or if stones are present in the common duct, the prospects of achieving a cure are fairly good.

In a series of cases recently reported by Comfort and others, the greatest relief from recurrent painful seizures was obtained when patients had had prolonged (at least six to twelve months) external drainage or permanent internal drainage of the common bile duct. Choledochoduodenostomy, when feasible, gave the best results. Apparently, from 40 to 60 per cent of patients who have pancreatitis may be expected to obtain relief by surgical means.

One group of patients affected with chronic pancreatitis continue to have attacks in spite of any treatment now known. The disease may progress to complete destruction of the pancreas by necrosis and fibrosis; cysts may form and pancreatic lithiasis or calcinosis develop. The progression in such cases depends on factors as yet undiscovered. In the case of severe relapsing pancreatitis in which the pancreas has been damaged irreparably and painful seizures cannot be controlled by conservative means, total pancreatectomy may be considered. Experience with this procedure in nonmalignant pancreatic disease is inadequate to warrant final opinion as to the probable end results.

PAIN AND DISCOMFORT IN PENIS

To the Editor:—**What is to be done with a man aged 52 whose chief complaint is pain and discomfort in the penis so that he can no longer have satisfactory sexual intercourse? He has not responded to anterior pituitary injections or testosterone, and sitz baths have not proved effective. He has been examined by a competent urologist, who does not find evidence of Peyronie's disease but who does believe that there is a fibrosis (slight) of the corpora which gives less vascular space and causes pain. Complete physical examination did not reveal prostatic, blood, or degenerative disease. The general psychic reaction seems fairly good.**

M.D., Missouri.

[This question has been referred to a psychiatrist and a urologist, whose respective replies follow.—Editor.]

Answer.—When careful and reasonably rapid physical evaluation does not reveal a cause for a prolongedly painful disorder, psychologic evaluation by a psychiatrist is a requisite. This is even more patent when pain is located about the genitals, but it holds good regardless of localization or whether the pain is of the constant or intermittent variety.

For too long ignorance about nervous pathways and their physiochemistry has been allowed to get in the way of treatment. In other words patients have been taxed with the physician's inability to reason out the chemistry or the anatomy of their symptom, and treatment of proved efficacy has been withheld. While chemical and anatomic factors merit the closest attention of the investigator, they are not the central core in the field of therapy.

The inevitable result of such confusion has been the search for specific and localized relationships of disease and therefore specific forms of treatment. Accordingly there is neither place nor time for investigation of the social setting under which the disorder developed or of traumatic experiences coincident with the symptom, nor can physicians seem to become properly concerned about what sort of person this was before he became ill. The mounting tide of psychoneurotic disturbances, if by nothing else, forces attention to the patient as well as to his symptom. Patients should not be penalized because of preconceptions or ignorance—ignorance that may not be personal but rather general.

Answer.—From what can be gathered from the description given, this man must have some type of fibrosis of the sheaths of the corpora cavernosa. And whether it is called Peyronie's disease or not makes no difference with the lesion or the symptoms which they present. Unfortunately the condition is chronic and persistent, a condition which rarely if ever responds completely to any type of therapy. But the pain and sometimes some of the fibrosis may be eliminated by local application of radium, and such treatment should be considered.

UNEQUAL RESPONSE TO INSULIN

To the Editor:—A patient aged 47, who has had diabetes for many years in spite of strict diet that I have tried to vary, and various doses of insulin, both regular and protamine zinc, cannot become regulated. The patient at one time will have a reaction following a given dose of insulin and yet, on the same dosage at another time, will have as much as 4 per cent sugar. Is it possible that some people will utilize their insulin more readily at one time and not utilize it at another?

M.D., Nebraska.

Answer.—Except in the presence of an infection, acidosis or other complication, patients utilize insulin with remarkable constancy. Variations in the activity of the anterior pituitary gland, the thyroid and the adrenals as well as menstruation have an influence on the effect of insulin. As far as this patient is concerned, one must remember that one is dealing with three variables—diet, exercise and insulin—and this being true it is remarkable that insulin acts as consistently as it does. Keeping diet and exercise the same, the third variable can be adjusted to the two others by giving enough protamine zinc insulin so that the rising urine or a second specimen, voided half an hour later before breakfast, is sugar free and then, that point having been established, an adjustment can be made for unmodified insulin to care for the utilization of carbohydrate during the working part of the day. This becomes difficult if the dose of unmodified insulin required is so great as to expose the patient to a reaction. Therefore, to protect patients who exercise much and have great responsibility, as truck drivers, one can lower the dose of unmodified insulin before breakfast to a safe level but get the patient later under complete control by a supplementary dose of unmodified insulin before the evening meal.

For example, the prescribed dosage might be 8 units of unmodified and 24 units of protamine zinc insulin before breakfast (by separate injection) and 8, 6 or 4 units of unmodified insulin before the evening meal. Naturally the ratios between unmodified and protamine zinc insulin and the total insulin given vary from patient to patient and also must be consonant with the diet and activity of the individual.

The diet should be divided into three meals and three between-meal lunches. One may occassionally resort to the extreme of prescribing 3 or 4 Gm. of carbohydrate every hour on the hour, with or without a little protein, at 9, 10, 11, 3, 4 and 5 o'clock, doubling or tripling the quantity on extraordinarily active days. Few people metabolize more than 10 Gm. of carbohydrate an hour. Small crackers contain 3 to 6 Gm. of carbohydrate. One ounce of peanuts represents approximately carbohydrate 6 Gm., protein 7 Gm. and fat 11 Gm.

TOXIC EFFECTS OF TRICHLORETHYLENE

To the Editor:—Please discuss trichlorethylene as to its physical nature, toxic effects, antidotes and measures to be taken in the prevention of harmful effects from it. This chemical substance is used in one step of electroplating, I am told, and goes under the trade names of Triad and Blacko-solvent.

Neal R. Moore, M.D., Bay City, Mich.

Answer.—Trichlorethylene belongs to that series of chlorinated hydrocarbons in which chloroform and carbon tetrachloride are better known members. Trichlorethylene in industry is widely used in metal degreasing and in dry cleaning. The American Standards Association has fixed the upper tolerable limit of the substance when inhaled for long periods at 200 parts per million of vapors. Oral intake may lead to intoxication, and there are some reasons to believe that absorption by the skin is considerable. If arbitrarily the toxicity of carbon tetrachloride is rated as 1, trichlorethylene may be rated at 0.5. Two schools of thought have appraised its toxicity. One group would limit its toxic action to minor consequences such as nausea, vomiting and diarrhea, with full recognition that anesthesia is readily induced. As an anesthetic, trichlorethylene is more active than chloroform. Another group attaches greater significance to the toxic properties of the substance and cites damage to the renal and hepatic systems along with other manifestations. As a general anesthetic this substance has been favored in the presence of pulmonary tuberculosis in the belief that the respiratory tract irritation is minimal. There are no precise antidotes warding off the action of trichlorethylene. The drinking of alcoholic beverages is believed to accentuate its action, while drinking milk possibly retards such action. The best prevention is the maintenance of work exposures below the 200 parts per million maximum safe level. In commercial preparations a large number of oxidation inhibitors has been introduced, some of which may be toxic. In addition to the two trade names mentioned a score or more of others may be encountered.

CARBON MONOXIDE POISONING AND CONGENITAL DEFECTS

To the Editor:—A woman three months pregnant sustained moderate carbon monoxide poisoning from which she recovered after three days' hospitalization. She subsequently gave birth to a full term infant with a congenital dislocated hip and cleft palate. Could the carbon monoxide poisoning have any bearing as a causative agent for these congenital anomalies?

Grant P. Raitt, M.D., Webster Groves, Mo.

Answer.—The halves of the palate unite first with each other and then with the nasal septum. Beginning in the ninth week, this fusion progresses rapidly from in front backward. Fusion of the palate is completed at twelve weeks. Diarthrodial joints are characterized both by a prominent joint cavity, between the movable skeletal parts, and by a ligamentous capsule at the periphery. The joint cavity arises in the third month from clefts in the dense mesenchyme, located between the prospective bones; the capsule is derived from the denser external tissue continuous with the periosteum (Arey, L. B.: Developmental Anatomy, ed. 5, Philadelphia, W. B. Saunders Company, 1946).

Medical literature reports a 6 months old fetus delivered normally at eight months but apparently dead for two months. The mother had suffered from carbon monoxide poisoning in the sixth month of pregnancy. The asphyxia was interpreted as having modified the process of maceration (Phillips, Percy: Carbon Monoxide Poisoning During Pregnancy, *Brit. M. J.* 1: 14 [Jan. 5] 1924).

Further investigation indicates that carbon monoxide poisoning is a remote possibility but an unlikely factor in causing congenital malformations in the newborn.

GENITAL UNDERDEVELOPMENT IN BOY

To the Editor:—A patient who has been suffering from hypothyroidism for a number of years but who is now improving has a son 12 years old who also had thyroid trouble. He is large for his age and weighs about 115 or 120 pounds (53 Kg.). *He tells his mother that all the boys laugh at him when he goes in bathing with them. His penis is small*, being scarcely an inch long. A small testis can be felt on the left side but nothing on the right side, except that there might be a small testis high on the right side on pressure downward from above. Over the various clinics of the world I have seen many of these cases, but I never learned what treatment to prescribe.

J. C. Ellis, M.D., McAllen, Texas.

Answer.—Treatment for a patient like this may be outlined as follows:

1. Chorionic gonadotropin in a dose of 500 international units three times a week by intramuscular injection. It is probable that both testes will be found in the scrotum after a few weeks of this treatment, but if one testis fails to descend it may have to be brought down by operation. Treatment with this material should be continued until epiphysial closure takes place.

2. The minimum amount of thyroid necessary to maintain basal metabolism at the normal level.

3. A suitable weight reducing diet.

On this treatment the boy should improve a great deal.

ALCOHOLISM

To the Editor:—I note with great interest the query and minor note on "Moderate Use of Alcohol" in The Journal, July 12, p. 985. I have worked with the practical problem of acute and chronic alcoholism for twenty years and have studied the past and contemporary literature regarding moderate or social drinking. Those of us in practical work on the subject of alcoholism definitely feel that there are no pathologic changes due to moderate drinking. Medically, it is felt that a chronic *alcoholic addict* is one who is handled by alcohol to such an extent that it interferes with one or more of his *important life activities*, the home, community or in business. On the other hand, the social drinker is apparently able to handle alcohol so that it does not take him out of one or more of these important life activities. Social drinkers, plus their ancestry, plus early emotional hurts, plus situations, plus social pressure, may sometimes develop into chronic alcoholic addicts. There is a gamble, no matter how small on some cases. To be sure, alcoholism could not exist without alcohol; but it seems absurd to blame that substance for what the human organism does with it. The task is to teach *humanity how to use it intelligently* and to avoid its abuse. Alcoholic addicts are made, not by alcohol, but by people who use it. Alcoholism today is an outgrowth of what our culture does to some personalities. We tried to ban alcohol by prohibiting its use and made the problem worse. What we need to recognize is that alcoholic addicts are sick people. Then we shall have taken the first great step toward the eradication of alcoholism. For some simple insight for patients I would suggest that the physician refer them to my article in the June 1946 issue of *Hygeia*.

Robert V. Seliger, M.D., Baltimore.

The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

Vol. 135, No. 8 CHICAGO, ILLINOIS OCTOBER 25, 1947

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THE FUTURE OF OTOLARYNGOLOGY

Chairman's Address

JOHN MACKENZIE BROWN, M.D.
Los Angeles

It is difficult to create a prophetic analysis on any subject, particularly in the field of medical science. The most accurate predictions have usually been made on the basis of a careful study of history. The past tells one what to expect of the future. Because the history of otolaryngology has been highlighted by so many important discoveries and contributions to the welfare of the human race, it is impossible for me to approach the future of this specialty with other than optimism.

Otolaryngology in the future will become a specialty not only of surgical but also of medical practice, which should attract the ablest men in the profession. There are numerous reasons for this view. The otolaryngologist of the future will find that he is the master of a great field of scientific thought and inquiry as well as of practical medicine and surgery. The very nature of the anatomic region assigned to him is enough excuse for the preceding statement. The changes in the specialty are indeed profound and will become more so as time goes on. Those who are living in this age are fortunate to be able to see this transition—a change which is bound to be only for the best. The otolaryngologist must release himself from the bonds of conservative restraint as far as the manner of scientific thinking is concerned. He must realize that the changes in this specialty are truly blessings.

In the field of otology several years ago the physician was primarily concerned with the surgical search for infection. Otitis media, mastoiditis and its numerous complications were the compelling interests. The otologist knew that the temporal bone housed a most intricate and complicated organ, which served the function of hearing and equilibrium, but in only rare instances did he turn an analytic view toward this field. He was quite pessimistic about the subject of hearing and hearing deficiencies; he was convinced that little could be done for his patients and in view of the other pressures from septic processes was willing to forget temporarily the functional aspect of otology. Consequently, when chemotherapy and biotherapy came on the scene and drastically reduced the necessity for surgical intervention in disease of the temporal bone, many otologists found themselves at a loss temporarily, and some viewed with alarm the changing nature of the specialty. It was considered by many that there were no new horizons to be sought and that the otology of the past was a thing of glorious memory. On the contrary, it was this same blessing of chemotherapy and biotherapy which removed much of the work entailed by the search for infection and which in turn made it possible for the specialist of today and tomorrow to take an entirely new slant on the problem of disease of the temporal bone. Now that the surgical complications of the acute form of otitis media and mastoiditis have become relatively uncommon the otologist may expect to see chronic suppuration less frequently in the future; he can look forward to a period when he can turn his thoughts to the functional aspects of the ear.

That this new approach is well under way may be ascertained by the present day status of fenestration surgery. The renewed interest in vestibular diseases, including Ménière's disease, the vast and pressing clinical problem of the causation of tinnitus and the innumerable problems suddenly posed by the aviation age have resulted in an entirely new and vital interest in the functional aspects of the ear. Deafness due to otosclerosis may now be viewed with far less pessimism than was necessary in the past. Regardless of the controversial nature of fenestration surgery, it is safe to say that the procedure of fenestration of the labyrinth is a surgical approach which is here to stay. No doubt this approach will undergo modifications in the future, but the fact remains that deaf people are hearing today as the result of fenestrations of their labyrinths. It is also a fact that patients who suffered the dizziness, tinnitus and deafness of Ménière's disease have in numerous instances been greatly improved and even cured by the surgical approach to the labyrinth employed by Day and Cawthorne. One cannot overestimate the valuable work in aural rehabilitation which has been contributed by the otologic services of the various military branches of the government following World War II. The utilization of radium in the nasopharynx, with excellent results in conduction deafness and tubal obstruction, was hastened by military usage. The newer approach to the use of hearing aids and the reeducation by acoustic training of deafened adults as well as children certainly come as a distinct credit to the members of the profession. The educational treatment of the deafened child, utilizing modern pedagogic, psychologic and acoustic technics and beginning as early as possible, even at the age of 2 years, will call for the increased cooperation and support of the otologist. He finds himself daily subjected to innumerable questions from the aviation industry. Men are being catapulted into altitudes and subjected to changes in atmospheric pressure for which the human organism was not designed. The otologist must answer these questions and must know how to prevent as well

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Read before the Section on Laryngology, Otology and Rhinology at the Ninety-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., June 12, 1947.

as treat the new types of ear diseases produced by the air age. The acoustic trauma of war is at least equalled if not surpassed by the acoustic trauma of industry today. The aero otitis media of the conventional airplane will become an infinitely greater problem in jet-propelled aircraft. The vestibular changes incident to rapid air and subsurface travel certainly will tax the ingenuity and the knowledge of the otologist. One can only be challenged by the field of otology today; as long as there are unanswered questions in any field of scientific thought, that particular field is bound to grow. One can see the analogy in physics. The unanswered questions of the atom proved to be the motivation which finally resulted in the unlocking of atomic power.

It is true that the approach to rhinologic disease has undergone even more radical changes than has otologic practice. Rhinologists of twenty-five years ago were bent on a search for pus and infected mucosa; then eradication was the main emphasis in rhinologic practice. Today, while obstructions and pus are still present, the nose and its adnexa are now studied in the light of physiologic and chemical changes. New interpretations of allergy and bacteriology, as well as of nasal physiology, almost completely reverse the practices of the rhinologists of twenty-five years ago. The rhinologist must now broaden his own horizons to include intensive study and interest in these contributing fields. Allergy has its constant manifestations in the nose and paranasal sinuses. Proper consideration of primary allergy as well as of the frequently associated secondary infections is essential to the rhinologist. It is true that he must become much more of an internist, but at the same time he must not think that surgical rhinology is a thing of the past. Pus and obstructions are still problems. The importance of the nose in the physiologic mechanism of respiration is now more fully understood and has become an integral part of present day rhinologic practice. The rhinologist of tomorrow will find himself in a position in which he must practice reconstructive surgery of the nasal pyramid as well as of the internal nose and sinuses in order to restore normal nasal function to his patients. His surgical field has not contracted; it has greatly expanded.

The sphere of laryngology and bronchoesophagology has become a necessary part of the daily practice of every otolaryngologist. There will always be foreign bodies in the food and air passages. Unfortunately, malignant conditions in these areas are on the increase rather than on the decrease. Improvements and advances in thoracic surgery have necessitated greater cooperation between the thoracic surgeon and the laryngologist. Accordingly this particular branch has become so highly specialized and has such a constantly expanding future that some physicians have been forced to restrict their practice to this field alone.

Not only have the changes in this specialty been generated through the efforts of the otolaryngologist, but innumerable aspects of change have come from contemporaries and colleagues in other fields of endeavor. He cannot forget the brilliant contributions of his pharmacologic colleagues in the development of the sulfonamide drugs, penicillin, streptomycin and the new antihistaminic drugs, "pyribenzamine" and "benadryl." Also homage must be paid to those colleagues in physics, physiology and psychology who have contributed so much to the knowledge of the acoustic end organ. The outstanding work in acoustic physics and acoustic physiology has provided a new insight into the function of the cochlea, of the middle ear and of the vestibular apparatus. One can look forward undoubtedly also to utilization of new radioactive weapons in his practice. Radium and deep roentgen therapy are well known to all. Undoubtedly the technic of applying other radioactive materials will be developed in the near future. The use of nitrogen mustards, the administration of various isotopes and the ultimate use of the cyclotron against disease may become a part of medical practice. We are at the threshold of a new and in many ways different era in otolaryngologic theory and practice. However, at this point it is important to emphasize that in spite of all the preceding statements and in spite of all the knowledge of constant change, it must not be forgotten that certain diseases will probably always exist and, even more important, that certain fundamental considerations in surgical practice as well as in diagnosis will remain the same. Sound otolaryngologic practice will always be based on anatomic, physiologic and pathologic facts. The otolaryngologist of tomorrow, just as he is today, will have to be an outstanding clinical anatomist and pathologist. The present state of efficiency in this specialty is due to the wonderful work and foresight of the American Board, with the active support and cooperation of medical schools and hospitals. The Board cannot receive too much praise for the time and energy spent on this important educational project. I wish to add my personal thanks for the many hours spent by every member of the Board on behalf of this specialty.

In order to educate the otolaryngologist of the future to be one of the most skilled practitioners in medicine it is necessary to plan for a long period of sound basic training as well as of practical experience. Undoubtedly such a man will not only be required to possess good knowledge of medicine and surgery but will have to be adept in the meticulous technics of otologic surgery and bronchoesophagologic procedures. He will have to possess a sound knowledge of acoustic physics in order to treat properly his otologic patients. He will have to be an excellent allergist and immunologist in order to do proper justice to his rhinologic patients. He will have to master certain fundamental technics in plastic reconstructive surgery in order adequately to treat deformities of the nose. And last but far from least he must be a fine practitioner of psychosomatic medicine, so that he may properly evaluate the problems of his patients.

Now that the course of study in otolaryngology has been extended to three years, including one year of basic sciences, the problem arises as to the best method of training residents. There are two chief methods to consider. First, the student may take a nine months' academic course either at the University of Pennsylvania or Washington University or in some similar institution. This should be followed by twenty-four months in an accepted hospital or hospitals. I say hospitals because I can see how a student could take his residency to great advantage both to himself and to the hospitals by spending one year in a children's hospital and one year in a general hospital. Some hospitals are being classified by the American Medical Association as offering limited residencies. These hospitals with limited residency facilities must be adequately staffed and have sufficient beds and outpatients for proper training. The hospitals should have an adequate library and well equipped clinical laboratories. I am sure that in this country there are many such hospitals, which could be organized and set up for worthwhile residencies in otolaryngology on a limited basis. Such a move would do a great deal not only for the hospital, attending staff members and residents but especially for the welfare of the patients; and it would increase the number of otolaryngologists in training now badly needed. The other method of training is by a residency in a hospital that is equipped to give its own basic science courses or is in close proximity to a medical school where the proper facilities and teachers are available. It has been found of great advantage to continue such subjects as anatomy and pathology throughout the training period of the resident. It is too well known that cold anatomy, unaccompanied by clinical practice, is soon forgotten. On the contrary, the anatomy that must be learned preceding each operation and that must be reviewed following each problem is the anatomy that sticks in one's mind. It is my plea, therefore, that a concerted effort be made at the present time to afford each resident in otolaryngology an opportunity for the study of basic science throughout his entire course of training in the hospital. I believe the student is best prepared by constant and continuous application of the basic sciences to the clinical aspect of the specialty. Whatever method is pursued in training, the Board will always see that the student is properly qualified before certification. There is every reason to look forward to a great future in the prevention and treatment of disease in the field of otolaryngology.

1136 West Sixth Street.

NEUROSURGERY (AND THE NEUROSURGEON) IN WORLD WAR II

R. GLEN SPURLING, M.D.
Louisville, Ky.

Most physicians who were actively engaged in the medicomilitary activities of World War II are one in their desire to dismiss the whole episode from their minds and fix their attention on new horizons. The physicians who were not active participants in those activities must be weary with hearing about them, for the progress of military medicine has been widely publicized. I therefore approach my subject, neurosurgery (and the neurosurgeon) in World War II, with some degree of trepidation. On the other hand, I think it will be profitable for all neurosurgeons, whether or not they participated actively in the medicomilitary phases of the war, to consider soberly and carefully the progress of this specialty during the four years of hostilities and in the period of so-called peace which came to pass when fighting ceased, as well as to reflect on the role of the civilian neurosurgeon in the Army in time of war.

Contrary to prewar predictions, injuries to the nervous system constituted nearly 10 per cent of all battle casualties. In numbers, in seriousness of the injuries and in the duration of treatment the neurosurgical load was second only to the orthopedic load. It is impossible now—and perhaps will never be possible—to determine accurately the number of major neurosurgical casualties which occurred in World War II. There were nearly 61,000 admissions to the neurosurgical centers in the Zone of the Interior, and it is likely that the over-all figure for these injuries was close to 100,000.

The management of a neurosurgical load of this size was a colossal task. It was difficult because of its magnitude and because competent neurosurgeons are not numerous. It was made more difficult—and unnecessarily difficult—by certain circumstances on which I shall comment later. But from every standpoint the task was well done.

The success of the neurosurgical therapeutic methods employed in World War II has already been recorded in the literature, and the details need no repetition. My purpose in this paper is twofold: (1) to summarize the procedures and policies in the major categories of neurosurgical endeavor, that is, head injuries, spinal cord injuries and peripheral nerve injuries, particularly as they differed from previous civilian procedures, and (2) to analyze briefly the role of the civilian neurosurgeon in the United States Army during World War II and in the future.

THERAPEUTIC POLICIES AND PROCEDURES

Head Injuries.—The management of acute penetrating wounds of the brain in World War II followed, with no important modifications, the basic concepts formulated by the late Harvey Cushing for the management of those injuries during World War I. Unlike the neurosurgeons of that war, however, the neurosurgeons of World War II had almost perfect control of the infections which seemed inevitable in the earlier war. Thanks chiefly to chemotherapy, to liberal quantities of whole blood and blood plasma and to rapid evacuation by air, it was possible to make adaptations of those principles to military and tactical circumstances which even Cushing, with his imaginative outlook on neurosurgical problems, could not have dreamed possible in 1917 and 1918.

The neurosurgeon of World War II soon learned that unless the patient's condition was deteriorating it was not necessary to hurry him into an emergency operation for a penetrating wound of the brain. The front line surgeon, therefore, was able to concern himself with urgent cases, in which delay could not be tolerated, for he could with a clear conscience send the patients whose need was less urgent to hospitals in the rear for definitive surgical treatment. This policy reduced morbidity and saved lives. Moreover, it was of great usefulness from the tactical point of view, since it kept beds in the forward zone cleared for urgent casualties.

An important technical advance in the surgical treatment of penetrating wounds of the brain was the introduction of tantalum plate. Most casualties who survive this type of wound are left with unsightly scars and deformities from cranial defects, for which reconstructive surgical intervention is necessary. Cranioplasty with tantalum seems completely to have solved this problem. Preliminary work had been done with tantalum in civilian neurosurgery prior to the war, but Army neurosurgeons perfected the technic of the method and expanded its usefulness far beyond anything that had been achieved in civilian practice.

A second important development in respect to penetrating wounds of the brain is still in progress. Epilepsy is a not infrequent sequel of this type of wound, and there is much left to be learned about it. After the war had ended, the Surgeon General accepted the sug-

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Read before the Section on Nervous and Mental Diseases at the Ninety-Sixth Annual Meeting of the American Medical Association, Atlantic City, N. J., June 12, 1947.

gestion of Army neurosurgeons that epileptic patients be concentrated in a specialized center, where they could be intensively studied. Under the direction of Dr. A. Earl Walker such a center was established at the Cushing General Hospital and was in operation until the fall of 1946, when it was taken over by the Veterans' Administration. During the period of its operation intensive studies were made on some 300 patients with post-traumatic epilepsy. At the present time, under the direction of Dr. Walker, four other post-traumatic epileptic centers are being established in general hospitals operated by the Veterans' Administration, and the work begun at the Cushing General Hospital Epileptic Center will be carried forward in them. The importance of this work, not only for military casualties but for further scientific observations under controlled conditions, needs no emphasis.

Spinal Cord Injuries.—One of the most important and certainly the most dramatic development in military neurosurgery in World War II was the program for the care and rehabilitation of patients with injuries of the spinal cord, though by no means all the credit for it belongs to the neurosurgeons. In the acute phases of their injuries these casualties were primarily neurosurgical problems, and neurosurgeons saw to it that every man with a penetrating wound of the spine associated with paralysis had the benefit of prompt surgical exploration by experienced personnel. Neurosurgeons, furthermore, worked unceasingly to expedite the transportation of these patients from forward hospitals to rear echelon installations properly equipped for their treatment. One can fairly say that the reason that so many of these tragically wounded men are alive and rehabilitated today is because of the unending efforts of all concerned in their care to supply prompt and expert treatment to them in the first phases of their injuries.

As soon as possible after operation paraplegic patients were evacuated to the Zone of the Interior, to specialized centers in general hospitals. Here a rehabilitation program was begun, based on well recognized policies effective in civilian clinics but applied with an efficiency and a zeal and a sympathetic understanding which surpassed any comparable previous effort. Much credit for its success belongs to the urologists, orthopedic surgeons, rehabilitation and dietary experts, physical therapeutists and other specialists who participated in it. The program was and is an example of medical and surgical cooperation and efficiency unique in both Army and civilian practice. The Veterans' Administration has taken it over, and some 1,200 paraplegic patients are now continuing their rehabilitation in five adequately equipped and staffed paraplegic centers.

The ultimate goal of the Army paraplegic program was that every patient should be able to resume his former place as an independent person in civilian life. Reach, quite naturally, exceeded grasp, but the rewards were nonetheless fruitful. Furthermore, the demonstration by the Army and the Veterans' Administration of what can be accomplished for paraplegic patients is gradually awakening the public to the civilian need for a similar program. In the United States today a thousand or more healthy young adults each year are suddenly rendered helpless by injuries to the spinal cord. At the present time it is next to impossible to find hospital space for them after the emergency phases of treatment have been completed. Modern rehabilitation facilities for civilians are practically nonexistent. The Army-Veterans' program is a challenge to civilian communities to provide adequate care for these unfortunate men and women, and to set as their goal the high standards established by the Army and Veterans' Administration in the paraplegic program.

Peripheral Nerve Injuries.—In one respect the most significant contribution made by Army neurosurgeons during World War II had to do with peripheral nerve injuries, for this is a problem which can be solved only in time of war. In peacetime the busiest civilian clinics do not see enough material of this sort to permit authoritative conclusions as to methods of management. In World War I the opportunity was there for the taking, but it was lost in spite of the numbers of peripheral nerve injuries which occurred, because no accurate and comprehensive follow-up studies were made.

One of the earliest efforts of neurosurgeons in World War II was to see to it that the opportunity was not lost a second time. It has not been. Early in 1944 a Peripheral Nerve Registry was established through the efforts of Dr. Barnes Woodhall, and by October 1945, when registrations were discontinued, some 8,000 peripheral nerve sutures had been registered. The registry has been taken over by the Veterans' Administration, and regular assessments of the progress of regeneration will be made by competent and impartial observers in five specially equipped centers. The follow-up study is planned to cover a five year period. When once these statistics are completed and have been analyzed and interpreted, the results of peripheral nerve surgery in World War II will be unequivocally clear, and the pattern will be established for the proper management of similar civilian injuries.

Certain conclusions are possible even at this time. It has been established beyond all reasonable doubt that the optimum time to suture a divided peripheral nerve is within three to six weeks after wounding. It has been clearly established that by careful coordination of personnel and facilities the majority of peripheral nerve injuries can be given definitive treatment within that optimum time, even in an active theater of operations, regardless of whether or not a bone injury is present also. It has been clearly established that the time-honored custom of splinting an extremity because of damage to a major nerve trunk is, in the absence of an associated fracture, not only useless but actually harmful. It has been clearly demonstrated that by early application of competent physical therapy the fixed, ankylosed joint which had previously been the surgeon's bugbear in the management of all paralyzed extremities will almost never develop.

In another field of peripheral nerve surgery it has been established beyond all reasonable doubt that grafting of large nerve defects in the human subjects by either autogenous or homogenous grafts was as unsuccessful in practice as it was fallacious in concept. All methods and technics were tested, and the results were uniformly bad. The question may be asked why a record of failures is emphasized. The reply is that had not the ineffectiveness of nerve grafting been settled conclusively and settled early in the war, many patients would have been treated by this inefficient method and would have lost the chance of nerve regeneration which is possible by better technical methods. As it was, neurosurgeons learned, without delay, how to overcome large gaps in nerves by other means than grafting, including, as a last resort, shortening the bone of a paralyzed extremity.

THE CIVILIAN NEUROSURGEON IN THE ARMY

Shortly after the United States entered World War II, it became my duty, as Consultant in Neurosurgery to the Surgeon General, to mobilize from civilian sources for military purposes all available neurosurgical talent. I knew then, though I did not comprehend the implications of the fact, that as of February 1942 there were in the United States only one hundred and fifty-four certified neurosurgeons. The significance of the number became apparent when I found that to meet the Tables of Organization of Army hospitals would have stripped every civilian clinic of its neurosurgical personnel and still would have left the Army short.

Army needs had to be met, and the most practical solution was to train young general surgeons in the principles of neurosurgery and to train them as quickly as possible. A program of instruction was at once set up consisting of two parts. The first part, didactic lectures and anatomic dissections, lasting a month, was originally at the Columbia University College of Physicians and Surgeons and was later transferred to the University of Pennsylvania School of Medicine. The second part consisted of clinical training in the neurosurgical centers in the United States. The students, at the conclusion of their didactic and laboratory work, were sent in small numbers to each of these centers and there, by lectures, instruction in the operating theater and ward work, they were taught the practical aspects of traumatic neurosurgery. When this training period, which lasted for three months, was completed, they were assigned to evacuation and general hospitals and to auxiliary surgical groups. Approximately two hundred young general surgeons were thus trained, and the exceptionally fine service which they rendered is the background of the unprecedentedly good care which neurosurgical casualties were given in World War II. Without them it could not possibly have been accomplished.

This demonstration of the possibilities of rapid training of specialists is, to my mind, one of the major medical accomplishments of World War II. If this method is applicable to the training of neurosurgeons in wartime, it should be equally applicable to the training of other surgical specialists in an emergency. The possibility is significant from the military point of view, and it has its lessons for civilian neurosurgery. In the prewar years there was a decided tendency in all surgical specialties, including neurosurgery, to underestimate and even belittle the value of a sound background in general surgery. As the result of the war experience it can be definitely said that a background of this sort is highly important in the training of civilian neurosurgeons and that in time of war it is essential.

In spite of the excellent neurosurgical results achieved in World War II, I should be less than honest if I permitted you to believe that I am fully satisfied with them. I am not. I doubt that any military neurosurgeon—certainly any neurosurgeon who was responsible for the development of clinical policies—is fully satisfied with them. It is a comfort to believe that we did as well as we could under the circumstances. But we should have done better. I base that statement on a number of considerations, about which I propose to speak frankly.

First of all, the question arises as to why approximately three hundred neurosurgeons were needed for 11,000,000 troops when several times as many civilians had been getting along very well with less than half as many. The obvious answer is that during wartime casualty rates far exceed the rates usual in peacetime. Analysis of the casualty figures confirms the observation but makes clear that it is not the whole answer. The most reasonable explanation is that under the Army system which existed in World War II efficient use was not made of neurosurgical personnel or, indeed, of the personnel in any other of the critical specialties. Such personnel was in short supply throughout the war. Yet it need not have been. Neurosurgical shortages developed because the Medical Department operated under the Army Service Forces, which is a service of supply, and because, as a result, medical personnel was handled, from an administrative point of view, exactly as rations, guns, clothing, food and other supplies were handled. Let me assure you that that is not the way to distribute medical personnel.

A second reason for shortages in neurosurgical personnel is that the channels of command were too complicated and too cumbersome to permit of efficient operation. I am fully aware that it is necessary in wartime to decentralize authority, especially in theaters of operations, but that awareness does not prevent me from also being aware that medical personnel in short supply cannot be efficiently utilized by nonmedical commands which, with all the will in the world, cannot comprehend or visualize medical needs and medical problems.

I had the responsibility, in the Zone of Interior and later in the European Theater of Operations, of seeing to it that neurosurgical casualties received competent neurosurgical care. The Army system made it an unnecessarily difficult task. My experience—and it was not unique—was to the effect that every time a new command was established, it became one more echelon of resistance to the proper allocation and distribution of medical talent. It was to the effect that every new commander who entered the picture, whether he was a base section surgeon or commanding officer of a hospital or of a hospital center, held on tightly to all the personnel in his command whether it was needed there or whether it was not. As a consequence, many critical specialists terribly needed elsewhere were frozen in commands and were unemployed for weeks or months at a time when they could have been doing vital work in the care of neurosurgical casualties.

To substitute constructive for apparently destructive comment, let me suggest a simple solution for this problem, based on recognition of the fact that critical specialists will always be in short supply and that their services must be utilized on that concept. I would not list a neurosurgeon, or any other critical specialist, on the Tables of Organization of any field, evacuation, general or station hospital, for two good reasons. The first is that all such units are necessarily deactivated, even when fighting is heavy, for longer or shorter periods, and that during these times specialists cannot function and are therefore lost to the Army. The second is that when once a medical officer appears on the Tables of Organization of a given unit it is a major operation to detach him from it.

My suggestion is to make neurosurgeons, and all other critical specialists, members of teams which are completely mobile and so entirely self contained that all of them can be moved at a few hours' notice from one location to another as the need for their services arises. They can be moved by small plane or by command car. Standard operating supplies are always available at all Army installations, and the only impedimenta which the team would need to carry with it would be its own specialized equipment.

It is true that neurosurgeons were attached to auxiliary surgical teams in World War II, but auxiliary teams were just that—auxiliary. By the plan which I propose these teams would cease to be supplemental. They would replace the specialized personnel hitherto attached to various types of installations and, if not entirely wasted in them, at least not used to the fullest possible advantage.

In the volumes on neurosurgery shortly to be published by the Surgeon General's Office as part of the medical history of World War II we have tried to present the operational and clinical material which I have discussed, and other matters of like importance to the medicomilitary future of the country, as fully and fairly as possible. We who provided the neurosurgical care for the casualties of that war owe it to those who will come after us to record, as faithfully and honestly as we can, our errors as well as our achievements, the difficulties under which we labored and whence they arose, the problems which we encountered and the solutions which we found for them during the war or which, in the light of experience and reflection, we would now suggest for them. If the neurosurgical history of World War II is written from this point of view, and if it is made compulsory reading for the neurosurgeons of any future war, then our successors will enter on their tasks equipped for them as we of World War II were not equipped for ours.

ABSTRACT OF DISCUSSION

Dr. Barnes Woodhall, Durham, N. C.: I find it difficult to discuss Dr. Spurling's statement or to amplify it because of the fact that it lies outside of my own personal knowledge. However, on many occasions Dr. Spurling and I have discussed the possible place of neurosurgery and neurology in the event of another conflict. Although many answers cannot be given at this time, it seems to me that at least two things can be discussed, and perhaps some action taken. The first has to do with this annoying problem of specialized personnel, and I think the problem can best be illustrated by reference to the case of a colleague of mine. You will recall that many of the neurosurgeons left early in the university units, and Dr. Spurling had to get the remainder. This colleague was removed from the reserve corps because he was on the dean's essential list, and he was unfortunate enough to encounter Dr. Spurling at a hotel in Chicago. Some hours later, about 3 o'clock in the morning, after sufficient inducements, he found himself back in the Army. That is a hard way to secure neurosurgical personnel. I feel that one thing can be done, and that is that our boards can get in touch with the Pentagon, and perhaps maintain an up-to-date list of neurosurgeons who are available, because of their strong backs, for military duty, and others who might be available for total civilian care. The second point has to do with the relationship between neurosurgeons and neurologists in the military structure. As you know, there were no neurosurgeons when the war began; there were only septic surgeons in their place, and Dr. Spurling traded the classification in the Army organization table, and furthermore the neurologist was on the medical side and the neurosurgeon was on the surgical side. There was only one hospital in this country in which neurologists and neurosurgeons worked together, both being specialists interested in organic diseases of the brain. This coordination was achieved only at the expense of a considerable "rumpus," involving even the Surgeon General. This is the one hospital that achieved great things in the efficient care of patients and in promoting clinical investigation. As many of you know, I am referring to the Cushing Hospital. Certainly the tables of organization should be changed so that the neurosurgeon and the neurologist may work together and may be free of this baneful influence of the general surgeon and the general internist. Dr. Spurling did not mention the driving force behind these accomplishments, but I am happy to name the driving force and to add that Dr. Spurling achieved a place in military neurosurgery in World War II that can only be compared with the place that was achieved by his chief, Dr. Cushing, in World War I.

ULTRAVIOLET IRRADIATION OF HUMAN PLASMA TO CONTROL HOMOLOGOUS SERUM JAUNDICE

ALBERT M. WOLF, M.D.
JACK MASON, M.D.
WILLIAM J. FITZPATRICK, M.D.
STEVEN O. SCHWARTZ, M.D.
and
SIDNEY O. LEVINSON, M.D.
Chicago

Numerous publications [1] have established that human blood, plasma or serum may harbor the agent of infectious hepatitis. This agent, believed to be a virus, has been the cause of hepatitis in recipients of human blood and plasma.[2] Because of the prolonged incubation period—two to six months—the relationship between administration of blood or plasma and the subsequent development of hepatitis is frequently overlooked.

It is easy to exclude blood donors with a history of jaundice or hepatitis and to discard blood specimens showing hyperbilirubinemia. Unfortunately, however, many persons may be unknowingly infected, for many cases of hepatitis occur without the development of typical symptoms and signs and thus pass undiagnosed. Furthermore, the virus may be present in the blood stream of the infected person for weeks before and after the acute episode of hepatitis. It is clear that administration of human blood or plasma carries with it a potential hazard of hepatitis, despite careful selection of donors.

In the absence of a satisfactory method or test for recognizing and excluding such infected blood, it is obviously desirable that all human blood plasma and serum be treated to destroy the virus of infectious hepatitis and protect the recipient of these materials from the hazard of hepatitis. Any proposed method must meet at least three criteria: 1. It must destroy the virus. 2. It must be free of harmful side effects. 3. It must be practical.

A new method of rapidly sterilizing suspensions of bacteria and viruses has been developed by Oppen-

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From the Samuel Deutsch Serum Center of the Michael Reese Research Foundation, and the Hektoen Institute for Medical Research of the Cook County Hospital.

Dr. Milton V. Veldee, Chief of the Biologics Control Laboratory of the National Institute of Health, Bethesda, Md., contributed valuable suggestions on carrying out this study.

[1] Neefe, J. R.; Gellis, S. S., and Stokes, J., Jr.: Homologous Serum Hepatitis and Infectious (Epidemic) Hepatitis, Am. J. Med. **1**: 3 (July) 1946.

[2] Paul, J. R.; Havens, W. P., Jr.; Sabin, A. B., and Philip, C. B.: Transmission Experiments in Serum Jaundice and Infectious Hepatitis, J. A. M. A. **128**: 911 (July 28) 1945.

heimer and Levinson.[3] This new method consists essentially of exposing rapidly flowing thin films of liquid for fractions of a second to a new and powerful source of ultraviolet emitting intense radiation of 2,537 angstrom and 1,849 angstrom wavelengths.

Oliphant[4] reported that serum infected with hepatitis virus and treated by this method was rendered free of the agent. Since the Oppenheimer-Levinson equipment is effective in destroying virus and since it is capable of irradiating large quantities of serum and plasma, it appeared that irradiation could be applied to plasma and serum if it had no deleterious effects on the plasma itself. The data herein presented represent a preliminary report of our studies to determine whether irradiated plasma is free of side effects from irradiation and whether it is satisfactory for human use.

The effects of irradiation of rabbit plasma were first tested. Rabbit plasma was pooled and divided into three portions, one of which served as nonirradiated control, one was irradiated for one second, and another for two and one-half seconds. Rabbits were given injections of 10 cc. per kilogram of body weight intravenously, as indicated in table 1. All of the rabbits tolerated the injection well. These results showed no evidence of toxicity from irradiation and seemed to justify experimental work with human plasma.

TABLE 1.—*Effects of 'rradiation on Rabbit Plasma*

	Ultraviolet Exposure									
	None				1 Second				2.5 Seconds	
	Rabbit 1	Rabbit 2	Rabbit 3	Rabbit 4	Rabbit 7	Rabbit 8	Rabbit 9	Rabbit 10	Rabbit 5	Rabbit 6
Temperature before injection	102.0	101.5	102.2	101.5	102.1	102.1	102.3	102.1	101.6	102.6
Temperature 1 hour after injection	102.8	102.8	102.4	102.5	103.2	103.0	103.1	103.0	101.7	103.0
Temperature 2 hours after injection	102.6	102.6	102.4	102.6	103.0	103.0	102.9	103.0	101.9	103.2
Temperature 3 hours after injection	102.1	102.8	102.9	102.4	102.6	102.9	102.6	102.8	102.2	102.8
Temperature rise	0.8	1.3	0.7	1.1	1.1	0.9	0.8	0.9	0.6	0.6
Average rise for group	1.0				0.9				0.6	

A small pool consisting of 2 liters of human plasma prepared from the blood of normal, healthy adults was irradiated, an exposure of one second being used. This exposure time was much longer than necessary to inactivate other viruses in past experiments. Three patients received 250 cc. each and a fourth received 500 cc. After administration, none of the 4 patients showed any reaction which would not fall well within the normal range.[5] These favorable results called for more extensive testing of irradiated plasma.

Plasma lot PT-4652, consisting of approximately 9 liters of human plasma prepared from the blood of normal, healthy adults, was processed in strict accordance with the requirements of the National Institute of Health, except for the additional step of irradiation, introduced just before bottling in final containers. The plasma was irradiated for approximately one-third second (an exposure time adequate to inactivate other virulent virus suspensions). A specimen was saved from this pool to serve as a nonirradiated control. The irradiated plasma on inspection showed no change in color and no change in general appearance. Specimens of the irradiated plasma were inoculated into mice and guinea pigs, which tolerated the injections well. Each of 3 rabbits was given an intravenous injection of 5 cc. of the irradiated plasma, and none showed any reaction or significant rise in temperature in the succeeding three hours. Electrophoretic studies of the irradiated human plasma and the nonirradiated control material were made.[6] The results showed "no consistent variation between irradiated and nonirradiated samples."

TABLE 2.—*Clinical Results with Irradiated Human Plasma (PT-4652)*

No. of Cases	Intravenous Injections, Cc.	Rate of Injection, Cc./Min.	Rise in Temperature	Comment
9	300	5 to 10	None	No evidence of reaction
1	350	6	None	This patient, asthmatic with osteomyelitis of the hip, experienced urticaria of face and chest
6	600	7½ to 10	None	No evidence of reaction
1	900	12	None	No evidence of reaction

Human beings have received injections from this lot of irradiated human plasma, with the results shown in table 2. Twenty-one patients received irradiated plasma in dosage from 250 to 900 cc. One patient experienced urticaria, a reaction encountered when untreated blood or plasma is used. No other reaction was observed.

It may, therefore, be tentatively concluded that controlled ultraviolet irradiation would appear to be a practical, yet harmless and safe, procedure which will free plasma (or serum) from the hazard of transmitting infectious hepatitis.

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3. Oppenheimer, F., and Levinson, S. O.: A New Method for the Production of Potent Inactivated Vaccines with Ultraviolet Irradiation: I. Principles, Technique and Apparatus. (Publication withheld by the Committee on Medical Research of the Office of Scientific Research and Development, Washington, D. C.). Levinson, S. O.; Milzer, A.; Shaughnessy, H. J., and Neal, J. L.: A New Method for the Production of Potent Inactivated Vaccines with Ultraviolet Irradiation: II. Sterilization of Bacteria and Immunization with Rabies and St. Louis Encephalitis Vaccines, J. Immunol. **50**: 317 (June) 1945. Milzer, A.; Oppenheimer, F., and Levinson, S. O.: A New Method for the Production of Potent Inactivated Vaccines with Ultraviolet Irradiation: III. A Completely Inactivated Poliomyelitis Vaccine with the Lansing Strain in Mice, ibid. **50**: 331 (June) 1945.

4. Oliphant, J. W.: Jaundice Following Administration of Human Serum, in Harvey Lectures, 1943-1944, Lancaster, Pa., Science Press, 1944, vol. 39, p. 254.

5. These tests were done at the Gallinger Hospital at the request of Dr. Milton V. Veldee of the National Institute of Health, who reported the results to us in a personal communication.

6. The Research Department of the Armour Laboratories performed these studies.

Aniseikonia.—There are twenty-one aniseikonia clinics in the United States. In our general population as many as two million persons may have complaints correctable by aniseikonic glasses which would otherwise remain unrelieved. This means that about 5 per cent of those wearing glasses would be benefited by aniseikonic correction. It may be years before enough refractionists obtain the instruments and acquire the experience necessary to prescribe successfully for this condition. In the meantime it is important for the refractionist to recognize which of his patients he should refer for aniseikonic study.—Miles, Paul W.: Factors in the Diagnosis of Aniseikonia and P[illegible] Maddox Rod Tests, *Am. J. Ophth.* **30**:885 [July] 19[illegible]

ANTIBIOTICS AND TUBERCULOSIS

A Microbiologic Approach

SELMAN A. WAKSMAN, D.Sc., Ph.D.
New Brunswick, N. J.

The recent interest in the production, isolation and utilization of antibiotic substances for the treatment of infectious diseases, especially the recognition of the fact that certain antibiotics, notably streptomycin, may find an important place in the treatment of tuberculosis, has suggested the advisability of reviewing the accumulated information on the effect of antagonistic micro-organisms and their metabolic products on Mycobacterium tuberculosis, the causative agent of human and animal tuberculosis.

Surprisingly enough, the interest in the possibility of suppressing the growth of the tubercle bacillus and of alleviating the disease caused by it date back to the early days of bacteriology. Numerous reports have been published which tended to emphasize the fact that a large number of micro-organisms, both saprophytic and pathogenic in nature, exert a pronounced effect on this bacillus.

The first attempt to treat clinical tuberculosis by means of nonpathogenic bacteria was made within three years after Robert Koch first isolated the organism responsible for this disease and within one year after this organism, which came to be generally known as Koch's bacillus, was described. The credit for the first application of bacteriotherapy to tuberculosis must go to Cantani.[1] On the basis of previous observations that the virulence of tuberculosis in corpses disappeared under the influence of putrefactive processes, Cantani in 1885 conceived the idea of treating pulmonary tuberculosis by having the patient inhale cultures of nonpathogenic bacteria. A common saprophytic organism known as Bacterium termo was used for this purpose. A woman aged 42, who had a large cavity in the superior lobe of the left lung, who suffered from fever and coughing and whose sputum test was positive, was treated by inhalation of a liquefied gelatin culture of the saprophyte, diluted with meat broth. The pathogenic organisms in the sputum were rapidly reduced in numbers and eventually disappeared completely; the fever diminished, and the patient's condition improved.

It may be of interest to quote from the original paper by Cantani, in which he expressed his ideas on the subject of bacteriotherapy and reported the results obtained in the treatment of this particular patient:

> The well known fact that certain bacteria may destroy the culture of others and also particularly of pathogenic schizomycetes, provided that they may get inside of them, suggested to me the idea of using this experience for therapeutic experiments in various infectious diseases. The first experiment was aimed at tuberculosis. I first selected Bacterium termo to combat the tuberculosis bacillus of Koch. . . . Herewith I made my first experiments on human tuberculosis. On May 4 inhalations of a pure culture of B. termo in liquefied nutrient gelatin which had been diluted with meat broth were started by means of a spray apparatus with a double rubber balloon. The expectoration decreased rapidly, and finally it ceased completely during the last days of the experiment. The number of tubercle bacilli decreased likewise, while B. termo could be demonstrated in the sputum; on June 1 the tubercle bacilli had disappeared completely from the sputum and could no longer be demonstrated while B. termo were observed in increasing numbers. There was a drop in temperature so that during the last days (of the experiment) the evening temperature no longer reached 100.4 F. (38 C.); the body weight was increased again to 39.6 Kg. The patient looked considerably better, the general condition was satisfactory; the subjective feeling of strength was improved considerably. Animals which were inoculated with the sputum (which was free of tubercle bacilli on microscopic examination) did not manifest any symptoms of tuberculous disease.
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> (Die bekannte Tatsache, dass gewisse Bakterien die Culturen anderer und namentlich auch pathogener Schizomyceten zerstören, wenn sie auf irgend eine Art in dieselben gelangen, brachte mich auf die Idee, diese Erfahrung für die Therapie verschiedener Infectionskrankheiten experimentell zu verwerten. Mein erster diesbezüglicher Versuch war auf die Tuberculose gerichtet, und wählte ich zunächst Bacterium termo, um damit den Bacillus tuberculosis Koch zu bakämpfen. . . . Hiermit führte ich meinen ersten Versuch am kranken Menschen aus. Am 4. Mai begannen die Inhalationen einer Reinkultur von *Bacterium termo in verflüssigter mit Fleischbrühe verdünnter* Nährgelatine mittels eines Zerstäubungsapparats mit doppelter Kautschukblase. Die Expectoration nahm rasch ab, bis zum gänzlichen Aufhören in den letzten Tagen des Experiments; die Tuberkelbacillen nahmen gleichfalls baldigst ab, während B. termo darin nachweisbar wurde; am 1. Juni fehlten die Tuberkelbacillen vollständig im Auswurf, und kamen nicht mehr darin vor, während B. termo in immer grösserer Quantität darin vorhanden war. Das Fieber nahm ab, so dass in den letzten Tagen der Beobachtung die Abendtemperatur nicht mehr 38 C. erreichte, und das Körpergewicht nahm wieder bis auf 39.6 Kg. zu; das Aussehen der Kranken war sehr gebessert, der Allgemeinzustand lobenswert, das subjective Kraftgefühl bedeutend gehoben. Tiere, denen die nun mikroskopisch an Tuberkelbacillen freien Sputa inoculirt wurden gaben kein Zeichen tuberculoser Erkrankung.)

Cantani did not claim that the saprophytic B. termo would destroy the deeply infiltrated tubercle bacilli. He merely extended hope that this first experiment might lead to the isolation of other bacteria which would be used in combating various pathogenic organisms. In commenting on Cantani's experiments Babes[2] suggested in the same year that it would have been advisable before determining the therapeutic effect of one microbe on another in vivo to test such effects by pure plate cultures on gelatinized mediums.

Soon afterward, in 1888, Babes[3] demonstrated that products of various saprophytic organisms, such as the pyocyaneus, tetragenus, staphylococcus and diplobacillus, have the capacity of inhibiting the growth of tubercle bacilli; streptococci, however, appeared to be favorable to the development of the tuberculosis organism. The importance of associative organisms in influencing the course of tuberculosis was thus emphasized.

Somewhat later, in 1893, Nannotti[4] observed that tubercular inflammation of the knee joint tended to subside as a result of the spontaneous occurrence of erysipelas. The use of streptococci or their metabolic products, filtered and sterilized, resulted in a modification of the tuberculous process; abscesses grew smaller and fistulas tended to heal. These studies led Prudden[5] soon afterward to the conclusion that there

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Read at the presentation of the Passano Award in Atlantic City, N. J., on June 11, 1947.

From the Department of Microbiology, New Jersey Agricultural Experiment Station, Rutgers University.

Journal Series Paper, New Jersey Agricultural Experiment Station, Rutgers University, Department of Microbiology.

[1] Cantani, A.: Versuch über Bacteriotherapie, Centralbl. f. d. med. Wissensch. 23: 513-515, 1885.

[2] Babes, V.: *Concurrence vitale des bactéries: Atténuation de leur propriétés dans des milieux nutritifs modifiés par d'autres bactéries; tentatives de thérapeutique bactériologique*, J. d. conn. méd. prat. 7: 321-323, 1885.

[3] Babes, V.: *Sur les associations bactériennes de la tuberculose.* Congr. p. l'étude de la tuberc., 1888, pp. 542-560.

[4] Nannotti, A.: Osservazione clinica e ricerche sperimentali intorno alla influenza delle infiammazioni da streptococco *nelle affecioni tuberculari*, abstracted, (Centralbl. f. Bakt. 14: 601-602, 1893).

[5] Prudden, M.: Concurrent Infection and Formation of Cavities in the Acute *Pulmonary Tuberculosis*, New York M. J. 40: 1-11, 1894.

was no evidence of a specific antagonism of a certain organism toward the tubercle bacillus; the results obtained by Nannotti may have been due to simple inflammation caused by the accompanying organisms.

Prudden also observed that the presence of streptococci in pulmonary tuberculous infections modified considerably the course of the disease. Highly suggestive results were obtained in culture; namely, the growth of the streptococci prevented the subsequent development of the tubercle organism. Prudden elucidated these results succinctly as follows:

> When the tubercle bacillus and the Streptococcus pyogenes are planted together on glycerinated (5 per cent) beef broth, the streptococcus grows as abundantly as in separate control cultures, while the tubercle bacillus does not grow at all. On the glycerinated broth, in which the streptococci had grown for five days, and which was rendered sterile by filtration through porcelain, the tubercle bacillus failed altogether to grow, either when the sterilized broth was used in its full strength, or when diluted in various degrees down to four times its volume with fresh glycerinated broth.

Although the culture filtrate of the tubercle organism also had an inhibiting effect on the growth of the streptococcus, this effect was of much lesser magnitude.

These early clinical and laboratory studies on the antagonistic effects of various micro-organisms and their metabolic products on the growth of Myco. tuberculosis in culture and on the course of the disease produced by this organism were later followed by more exact studies, both in vitro and in vivo. They finally culminated in the work of Rappin [6] on spore-forming bacteria and of Vaudremer [7] on fungi which tended to establish the sensitiveness of the tubercle bacillus to the products of various organisms. This work done between 1910 and 1913 ended the first period of study of the antagonistic effects of various micro-organisms on tubercle bacilli; it also established definitely that not only living microbes but their products, now known as antibiotics, have the capacity of inhibiting and even destroying the tubercle organism both in the test tube and in the living body. Hope was thus aroused that in time a practical agent would be found for the treatment of this important and widespread disease, which has long been known as the white plague of mankind.

Before proceeding to analyze the results of the more recent investigations, especially the effects of antibiotics on tuberculosis, it may be of interest to examine certain pertinent information concerning the survival of Myco. tuberculosis in the soil and in other substrates and the production of antituberculosis agents or tuberculostatic and tuberculocidal substances by micro-organisms.

SURVIVAL OF MYCOBACTERIUM TUBERCULOSIS OUTSIDE THE HOST

The fate of the organism causing tuberculosis outside the human or animal host has received much consideration. Difficulty has frequently been encountered in demonstrating the presence of the tubercle bacillus in a given natural substrate, such as soil and water, because of lack of suitable methods and the need for animal inoculation in order to establish the true pathogenic nature of the organism. The survival of Myco. tuberculosis outside the host was found to be affected by light and by increased temperature; it was greater in the dark than in diffused light and greater at a lower than at a higher temperature.

When a culture of the bovine strain of Myco. tuberculosis was mixed with cow manure and exposed in a 2 inch (5 cm.) layer in a pasture, it remained virulent for two months in sunlight and longer in the shade. The organism was still alive on the two hundred and thirteenth day and was dead on the two hundred and thirtieth day. In running water the cells survived for more than a year.[8] It was gradually recognized that the presence and activity of nonpathogenic micro-organisms greatly affect the life of the tubercle bacillus outside the host. The pathogen survived, for example, for three hundred and nine days in sputum kept in darkness even when completely desiccated. In decomposing sputum, however, it could be isolated after twenty days but not after twenty-five days. It remained alive and virulent in cow's feces exposed on pasture land for at least five months during the winter, two months during the spring and four months during the autumn; in the summer, however, no living tubercle bacilli could be demonstrated even after two months. Feces protected from earthworms yielded viable cells even after five months.

The addition of manure to soil was believed to favor the survival of the tubercle bacillus, as indicated by the fact that a higher proportion of test animals became tuberculous when the amount of manure added to the soil was increased.[9] The presence of the organism in soil and in manure was established even after one hundred and seventy-eight days but not later. On grass the organism survived for at least forty-nine days. Rhines [10] found that Myco. tuberculosis multiplied in sterile soil as well as in the presence of certain pure cultures of bacteria; however, a certain unidentified fungus was able to check the development of the pathogen, especially in manured soil. In nonsterile soil the pathogen was slowly destroyed, the plate count being reduced in one month to about one sixth of the original. Numbers of an avian strain of the tubercle bacillus were reduced in seventy-three days from 48,000 to 1,400 cells per cubic centimeter in sewage and to 4,200 in stream water.[11]

PRODUCTION OF ANTIBIOTIC SUBSTANCES BY MICRO-ORGANISMS

Every investigator of the organism causing tuberculosis observed at one time or another that when his cultures became contaminated with molds or with bacteria the culture of the pathogen no longer grew. This inhibiting effect was believed to be due to competition for nutrients or for oxygen, or to the formation by the invading saprophyte of growth-inhibiting substances which affected the pathogen.

It was gradually established that the production of antituberculosis or tuberculostatic and tuberculocidal agents is widespread among micro-organisms; that these agents, or antibiotics, are active against various acid-fast bacteria, and that they are produced abundantly by various members of all major groups of micro-organisms, namely, fungi, bacteria and actinomycetes.

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[6] Rappin, M.: Action exercée par les diastases de quelques espèces saprophytes sur la tuberculose expérimentale du cobaye, Gaz. méd. de Nantes 1912, pp. 958-960.

[7] Vaudremer, A.: Action de l'extrait filtre d'Aspergillus Fumigatus sur les Bacilles Tuberculeux, Compt. rend. Soc. Biol. **74**: 278-280 and 752-754, 1913.

[8] Briscoe, C. F.: Fate of Tubercle Bacilli Outside the Animal Body, Bulletin 161, Illinois Agricultural Experiment Station, 1912, pp. 279-375.

[9] Maddock, E. C. G.: Studies on the Survival Time of the Bovine Tubercle Bacillus in Soil, Soil and Dung, in Dung and on Grass, with Experiments on the Preliminary Treatment of Infected Organic Matter and the Cultivation of the Organism, J. Hyg. **33**: 103-117, 1933.

[10] Rhines, C.: The Persistence of Avian Tubercle Bacilli in Soil and in Association with Soil Microorganisms, J. Bact. **29**: 299-311, 1935.

[11] Rhines, C.: The Longevity of Tubercle Bacilli in Sewage and Stream Water, Am. Rev. Tuberc. **31**: 493-497, 1935.

Among the fungi, the Aspergillus fumigatus group received particular attention.[12] Although this organism produces four antibiotics, the active substance responsible for the antituberculosis effect appears to be fumigacin. Among the bacteria the Bacillus subtilis group was given special consideration, especially in recent years, with subtilin coming lately to the fore as a possible tuberculostatic agent. The actinomycetes have contributed several antibiotics active against tuberculosis, namely, actinomycin, streptothricin, streptomycin and nocardin. Among these, streptomycin is recognized to be the most promising therapeutic agent for the treatment of tuberculosis, because of its desirable physical and chemical properties, its low toxicity to animals and its pronounced effect on the tuberculosis organism both in vitro and in vivo.

PRODUCTION OF ANTITUBERCULOSIS AGENTS BY FUNGI

Although it was known before the end of the last century that various fungi have the capacity of inhibiting the growth of and even of destroying various bacteria, it was not until 1913 that Vaudremer [13] first reported that certain fungi, comprising members of the Aspergillus (A. niger, A. fumigatus) and Penicillium groups, have a destructive effect on Myco. tuberculosis and that these fungi produce tuberculostatic and tuberculocidal substances. He was led to these studies by the observation that the fungi destroyed tuberculin, a phenomenon which he ascribed to the proteolytic activities of the organisms. Since tuberculin was considered as a toxalbumin, one of the constituents of the protoplasm of Myco. tuberculosis, a study was made of the effect of one of these fungi, A. fumigatus, on the tubercle bacillus. When virulent cells of this organism were suspended for twenty-four days at 39 C. in a filtered extract of A. fumigatus and the culture thus treated was inoculated into experimental animals, infection did not occur. The conclusion was reached that the fungus produced a thermostable substance, which was responsible for the antituberculous effects; this substance caused the lysis or digestion of the tubercle bacilli and rendered them nonpathogenic.

Vaudremer utilized the extracts of the fungus for the treatment of some 200 patients with tuberculosis. Although certain quite unexpected results were obtained, any conclusions based on them were considered as premature; however, the preparations appeared to be nontoxic. These results hardly justified any recommendation at that time that this method of treatment of tuberculosis be further extended. This is expressed emphatically in Vaudremer's paper:

> It is still too early to draw any conclusions with regard to the treatment of tuberculosis in man. Since 1910 we have treated more than 200 patients with extracts of A. fumigatus; the treatment was practiced in several hospitals and sanatoriums in Paris. From the facts observed one may conclude that these injections are innocuous, since they never caused a febrile reaction. Occasionally one even observes an unexpected recovery. In other cases one may observe a temporary improvement; but unfortunately the instances are still numerous in which tuberculosis takes its course.
>
> (Toute conclusion est également prématurée si on envisage le traitement de la tuberculose humaine. Depuis 1910, nous avons traité plus de deux cents malades avec les extraits d' *A. fumigatus*; le traitement a été appliqué dans plusieurs hôpitaux et sanatoriums parisiens. Des faits que nous avons observés, on peut conclure à l'innocuité de ces injections qui ne provoquent jamais de réaction fébrile. Parfois même on voit survenir des guerisons inespérées. Dans d'autres cas, on observe une amélioration passagère; mais malheureusement les faits sont encore nombreux où la tuberculose poursuit son évolution.)

Nearly a quarter of a century elapsed before fungi were again considered as organisms capable of producing substances that possessed antituberculosis properties. A real flow of contributions was started in 1940; Zorzoli [14] observed that various fungi including certain aspergilli and mycotorulae produced a thermostable substance which had a pronounced antibacterial effect on the human and bovine strains of Myco. tuberculosis. These results were confirmed by experiments in guinea pigs: when the tubercle organism was exposed for varying periods of time to the culture filtrates of the aforementioned fungi it lost much of its virulence to animals. The Oxford group [15] which investigated the potentialities of penicillin could not detect any inhibitory action of this antibiotic on the growth of the tubercle organism even in a dilution of 1:1,000.[15]

Soltys [12c] tested various fungi for their action against acid-fast bacteria; here again, A. fumigatus proved to be the most active organism. Unfortunately, he labeled the active filtrate aspergillin, a term previously used to designate the black pigment of A. niger. The antibiotic substance was thermostable, bacteriostatic rather than bactericidal, and active in a dilution of 1:10 to 1:20 against the human, bovine and avian strains of Myco. tuberculosis and in 1:50 to 1:100 dilution against Mycobacterium phlei.

Asheshov and Strelitz [12a] also observed a definite effect of A. fumigatus preparations on the Bacille Calmette Guérin strain but not on the avian strain of Myco. tuberculosis. The bacteriostatic action was greater against the former than against staphylococci, although the bactericidal capacity was lower. According to Jennings,[16] helvolic acid, or fumigacin, one of the antibiotics produced by A. fumigatus, completely inhibited the growth of the tuberculosis organism isolated from sputum in concentrations of 1:10,000. In 1:100,000 dilution the inhibition was only partial.

These results seem to point definitely to the fact that A. fumigatus is the organism of choice for the production of antituberculosis agents but other fungi also have tuberculostatic and tuberculocidal properties.

Aspergillus ustus produces an antibiotic that has the capacity of inhibiting the growth of Myco. tuberculosis and Mycobacterium ranae.[17] The active substance was extracted from the medium with ether as well as with other organic solvents. On evaporation of the solvent, the residue was dissolved in phosphate buffer of p_H 11.0; on acidification, a yellow flocculent precipitate was obtained. The preparation was effective against Myco. ranae in a dilution of 1:150,000 to 1:300,000.

Aspergillic acid, a metabolic product of Aspergillus flavus, gave complete growth inhibition of a fast-growing strain of Myco. tuberculosis in a dilution of

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12. (*a*) Asheshov, I. N., and Strelitz, F.: An Antibiotic Substance Active Against Mycobacterium Tuberculosis, Science **101:** 119-120, 1945. (*b*) Goth, A.: The Effect of Cobalt on the Antituberculosis Activity of Aspergillic Acid, Fed. Proc. **5:** 180, 1946. (*c*) Soltys, M. A.: Antibiotic Action of Aspergillus Fumigatus Against Mycobacterium Tuberculosis, Nature, London **154:** 550-551, 1944.

13. (*a*) Vaudremer, A.: Action de quelques microbes sur la tuberculine: Contribution a l'étude de la nature de la tuberculine, Ann. Int. Pasteur **24:** 189-195, 1910; (*b*) footnote 7.

14. Zorzoli, G.: Influenza dei filtrati di alcuni miceti sul Bacillo tuberculare umano e bovino. Ann. Inst. "Carlo Forlanini," **4:** 208-220 and 221-237, 1940.

15. Abraham, E. P.; Chain, E.; Fletcher, C. M.; Gardner, A. D.; Heatley, N. G.; Jennings, M. A., and Florey, H. W.: Further Observations on Penicillin, Lancet **2:** 177-189, 1941.

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1:80,000 in broth, but it was not active in Long's synthetic medium.[18] The lack of activity in this medium was due to the presence of the ferric ion, which inactivated the antibiotic. It was suggested that iron is essential for the growth of Myco. tuberculosis and that aspergillic acid exerts an inhibiting effect on this organism by interfering either with the utilization of iron or with the functioning of an iron-containing enzyme system.[12b] Other strains of aspergilli were also found [19] capable of forming in synthetic mediums antibiotics active against the tuberculosis organism.

Although, as has been pointed out, penicillin has no tuberculostatic activity, ether extracts of the crude culture medium of Penicillium notatum were reported by Smith and Emmart [20] to exert a pronounced in vitro effect on the tubercle organism. A slightly favorable effect was obtained in the chorioallantoic membrane of the chick embryo and on guinea pigs. The extracts of another fungus, Penicillium cyclopium, were without effect, however, thus indicating that the production of the antituberculosis factor is characteristic of P. notatum.

More recently, however, penicillin itself, when used in concentrations of 20 to 80 Oxford units per cubic centimeter, was observed [21] to exert a bacteriostatic effect on freshly isolated strains of Myco. tuberculosis, but it was without effect on an avirulent laboratory strain; the latter actually had the capacity of destroying penicillin. When used in small amounts, penicillin may actually produce a favorable effect on the growth of the tubercle organism.

The Fusarium group of fungi also contains organisms that possess tuberculostatic properties. Carr [22] observed that a culture filtrate of Fusarium solani tested in vitro against the H 37 strain of human tuberculosis was found to decrease its vitality. An alundum capsule containing 5 cc. of medium was inoculated [23] with a culture of Fusarium and introduced into a 250 cc. Erlenmeyer flask containing 100 cc. of Long's medium, the latter being inoculated with a fresh virulent strain of the tubercle organism. The culture filtrate of the Fusarium was active in a dilution of 1:20, the substance being thermostable. A pigment, designated as javanicin, was isolated [24] from Fusarium javanicum; it was active in vitro against the human strain of Myco. tuberculosis in concentrations of 1:50,000 to 1:100,000; this pigment was relatively nontoxic.

Miller and Rekate [25] reported that culture filtrates and extracts of certain fungi were inhibitive to the tuberculosis organism. Gerber and Gross [26] designated one such extract mycocidin; its effect on the human strain of tuberculosis was both bacteriostatic and bactericidal.

Certain higher, or mushroom, fungi also produced antibiotics which possess antituberculosis properties. It is sufficient to mention clitocybin and nebularine. The first is a product of Clitocybe candida and Clitocybe gigantea; [27] it is soluble in water and in various organic solvents, such as ether, alcohol, acetone and chloroform; it is not particularly toxic, and it exerts both a static and a lytic action on the tubercle organism not only in vitro but also in vivo, in guinea pigs. The second antibiotic is found in the press juice of Clitocybe nebularis; it is a thermostable substance and is active on mycobacteria and Brucella abortus.[28] A pigment designated as lactaroviolin was recently [29] isolated from Lactarius deliciosus; the chemical composition of the substance was given as $C_{15}H_{14}O$; it inhibited the growth of Myco. tuberculosis in a concentration of 0.31 millimol per liter of medium.

Attention may be also called here to a phenomenon described as forced antagonism. By the use of a synthetic medium, with living tubercle bacilli as the only source of nitrogen (2 per cent sucrose and 0.1 mg. of living bacteria in 2 cc. of medium), Schiller [30] trained or forced beer yeasts to develop mechanisms which enabled them to digest the cells of the pathogen. In two days the yeasts developed and the tubercle organisms disappeared. The centrifuged medium contained an antituberculosis factor, since it had the capacity of rapidly digesting living tubercle bacilli, preceded by their agglutination. The tuberculolytic substance was thermolabile; its action was believed to consist in dissolving the wax of the bacterial cells. These results have never been confirmed; in one experiment the yeasts and fungi were actually superseded by the tubercle organism.[31]

This brief survey of the production by fungi of antibiotics active against tuberculosis justifies the conclusion that many are potentially active agents which vary greatly in their origin, chemical nature and activity in the animal body. Although none of these substances has so far achieved practical application for therapeutic purposes, there is hope that, in view of the relatively limited search which has been made to date, some compounds may still be found which can be utilized in one way or another—alone, as a supplement or in a modified chemical state—in the control of this disease.

PRODUCTION OF ANTITUBERCULOSIS AGENTS BY BACTERIA

A brief survey of the production of antituberculosis substances by bacteria will also reveal many highly promising observations, although at some periods this subject seemed to have been completely neglected.

Since Babes first demonstrated experimentally in 1888 that certain bacteria have the capacity of influencing the growth of the tubercle bacillus, considerable evidence has accumulated. This was followed by various observations made by different investigators that the property exerted by saprophytic and pathogenic organisms on Myco. tuberculosis is not limited to certain few forms but is widely distributed among bacteria and other micro-organisms; some of these are capable of producing active antituberculosis agents.

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[20] Smith, M. I., and Emmart, E. W.: The Action of Penicillium Extracts in Experimental Tuberculosis, Pub. Health Rep. **59:** 417-423, 1944.

[21] Iland, C. N.: The Effect of Penicillin on the Tubercle Bacillus, J. Path. & Bact. **58:** 495-500, 1946.

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[30] Schiller, I.: Ueber erzwungene Antagonisten, Centralbl. f. Bakt. (Abt. I) **96:** 54-56, 1925; **103:** 304-314, 1927.

[31] Barglowski, D.: Influences of Mycetes on Tubercle Bacilli, Am. Rev. Tuberc. **54:** 393-397, 1946.

In 1892 Rongali[32] demonstrated, for example, that a reciprocal antibiosis exists between various bacteria and Myco. tuberculosis. Nannotti and Prudden's results in this field have already been mentioned.

Ramond and Ravaut[33] established in 1899 that when various bacteria, such as B. subtilis, Staphylococcus albus, Staphylococcus aureus and Micrococcus tetragenus, are grown simultaneously with Myco. tuberculosis, the latter does not develop. When a drop of a culture of one of the preceding bacteria is added to a culture of the tubercle organism, growth of the latter is stopped. The metabolic products of the saprophytic bacteria had a similar, although weaker, effect on the growth of the parasite. In 1902 Michelazzi[34] reported that M. tetragenus has the capacity of suppressing Myco. tuberculosis not only in vitro but also in vivo. When the micrococcus was inoculated into experimental animals, the growth of the tubercle bacillus was prevented. The favorable effect of the administration of yeast on pulmonary tuberculosis was demonstrated by Huggard and Moreland in 1905.[35] The associative growth of Clostridium perfringens and Myco. tuberculosis was observed[36] to result in a lytic action of the former on the latter in vitro but not in vivo.

In 1912 Rappin[6] observed that culture filtrates of a number of spore-forming bacteria, such as B. subtilis, Bacillus mesentericus and Bacillus megatherium, have a suppressive effect on the development of the tubercle bacillus. When culture filtrates of the bacteria were injected into rabbits infected with the tubercle organism, the development of the disease was prevented and no toxic manifestations occurred. This activity was *said to be due to the formation by the spore-forming* bacteria of antibacterial agents designated as diastases. Thus the test tube experiments on the effect of bacterial products on the tubercle organism were confirmed by studies in experimental animals. Although these results were highly significant, they did not arouse sufficient interest and were not followed up immediately.

It took more than a decade before further studies on the antituberculosis properties of bacteria were reported. Most of the investigations were centered largely on the spore-forming aerobes. In 1926 Van Canneyt[37] demonstrated that B. subtilis exerts a lytic effect on Myco. tuberculosis. Olivier[38] also demonstrated that B. subtilis has the capacity of bringing about the lysis of the tubercle bacillus in eight to twelve days.

More recently, subtilin (obtained[39] from B. subtilis) was found to inhibit the growth of Myco. tuberculosis in Long's medium, in a dilution of 1:50,000; in 1:10,000, it was also bactericidal. This substance was also effective against experimental tuberculosis in [illegible] strain of B. subtilis described as Bac[illegible] produced on a synthetic medium an agent which was active against the tubercle bacillus.[40] Other spore-forming bacteria, both aerobic[41] and anaerobic forms,[42] have now been found to cause the loss of virulence, to inhibit the growth of and even to bring about the lysis of tubercle bacilli. In some cases the culture filtrates of the antagonistic bacteria were as active as the culture itself. Some attempts have actually been made to utilize these culture filtrates in the treatment of human subjects.

Among the preparations obtained from spore-forming bacteria it may also be of interest to mention eumycin[43] and bacillin.[44] The latter was obtained from an organism isolated from soil enriched with tubercle bacilli.

Various non-spore-forming bacteria, including Escherichia coli and Pseudomonas aeruginosa are capable of exerting a pronounced tuberculostatic and tuberculocidal effect. Different strains of Esch. coli show great variations in their antibacterial action.[45] Throughout the most extensive literature on the antagonistic effects of Ps. aeruginosa and its antibiotic, pyocyanase, there are suggestions of their possible action on the tuberculosis organism. However, positive evidence has been submitted only recently. A twenty day culture of Ps. aeruginosa was found[46] to inhibit the growth of Myco. tuberculosis in dilutions of 1:80; a crude chloroform extract was effective in 1:128,000 dilution. Short exposure of the pathogen to the culture of the antagonist caused morphologic changes, followed by loss of acid-fastness and final lysis. An antibiotic substance designated as pyolipic acid was isolated from Ps. aeruginosa; this substance was characterized by decided antituberculosis properties.[47]

Certain streptococci have also been found to possess the capacity of producing antituberculosis substances. An organism described[48] as Micrococcus antibioticus was active against Myco. tuberculosis in vitro. Another coccus isolated by Mattick[49] from milk proved extremely effective against both human and bovine strains of the tubercle bacillus; this coccus yielded an antibiotic agent, nisin, which was active in a dilution of 0.000006.

This brief summary tends to establish the fact that bacteria also offer potential sources of antibiotics that possess tuberculostatic and tuberculocidal properties. Much is still to be done in this direction.

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PRODUCTION OF ANTITUBERCULOSIS AGENTS BY ACTINOMYCETES

Like the fungi and the bacteria, the actinomycetes comprise a number of organisms or species which produce antibiotics active against the tubercle bacillus. Some of the active agents that have so far been isolated or concentrated are actinomycin, litmocidin, nocardin, streptothricin and streptomycin. Of these, the last named is the most promising.

There are several significant points about the distribution of antimycobacterial properties among the actinomycetes: 1. A large number of species and strains of these organisms are capable of exerting an antituberculosis effect. 2. The active substances produced by these organisms vary greatly in their chemical properties and their toxicity to animals. 3. The action of these substances on mycobacteria and other micro-organisms vary greatly. Their antibiotic spectrums range from extremely narrow ones which are active only against certain mycobacteria, as in the case of the antismegmatis factor,[50] to exceedingly wide zones when the activity is broadly distributed against gram-positive and gram-negative bacteria and even against fungi, as in the case of streptothricin.[51]

Streptomycin possesses all the desirable properties as a potential chemotherapeutic agent in the treatment of tuberculosis. Two cultures of the organism producing streptomycin were isolated in September 1943; the announcement of the isolation of streptomycin itself was made in January 1944 in a paper by Schatz, Bugie and Waksman.[52] Soon afterward, Schatz and Waksman[53] reported that streptomycin is highly effective against Myco. tuberculosis and other mycobacteria. The human strain H 37 was particularly sensitive to this antibiotic. The tubercle organism, which was inhibited by only 0.2 microgram of the antibiotic, was six or more times more sensitive to streptomycin than was Esch. coli. Streptomycin possessed decided tuberculostatic and tuberculocidal properties; it was far more active than streptothricin, a closely related antibiotic. It was also active against various bacteria both in vitro and in vivo and had limited toxicity to experimental animals.[54] Not long afterward, Feldman and Hinshaw[55] established that streptomycin is effective in the treatment of experimental tuberculosis in guinea pigs. Evidence was thus obtained of the striking antibacterial activity of streptomycin in vivo. It resulted in the resolution, fibrosis or calcification of lesions in all animals and the apparent eradication of the infection in at least 30 per cent of the animals. Positive reactions to tuberculin tests have been reversed to negative reactions, free from the organism Myco. tuberculosis.

Different strains of the tubercle bacillus, freshly isolated from patients, were found by Youmans[56] to vary greatly in their sensitivity to streptomycin. The range in sensitivity was between 0.2 and 12.5 micrograms per cubic centimeter, although in the great majority of cases freshly isolated cultures were sensitive to less than 1 microgram per cubic centimeter. On contact with streptomycin, either in the test tube or in the human or animal body, Myco. tuberculosis gives rise to resistant strains which require far greater concentrations of the drug for their inhibition or destruction. When inoculated into animals, streptomycin-resistant cultures retained their resistance and no longer responded to streptomycin therapy.[57]

Actinomycetes produce other antibiotics which are active against Myco. tuberculosis. It is sufficient to mention nocardin, produced by Nocardia coeliaca.[58] This substance is found both in the culture medium and in the mycelium of the organism. It has an inhibiting effect on the slow-growing strains of Myco. tuberculosis varieties hominis and bovis in concentration of 10 to 50 per cent of the culture filtrate; unfortunately, it has only a slight in vivo effect.

The most important chemotherapeutic agent now known for tuberculosis, namely streptomycin, has been contributed by the actinomycetes. There is no doubt, however, that other agents supplementary or superior to streptomycin will be found, because of the wide occurrence of antimycobacterial substances among members of this group of micro-organisms. The possibility that different forms of streptomycin or even different sources of this antibiotic may vary quantitatively in their antituberculosis effect has also been indicated.[59]

PRODUCTION OF ANTITUBERCULOSIS AGENTS BY HIGHER PLANTS

Finally, in order to make the survey complete, attention must also be directed to the higher, green plants which produce a variety of substances designated as "phytoncides" and which possess tuberculostatic and tuberculocidal properties. Marshak,[60] for example, obtained a crystalline preparation from the lichen Ramalina reticulata. This is a nonnitrogenous, water-insoluble substance; when it was administered subcutaneously in 10 to 20 microgram portions given once a day for a period of three weeks to guinea pigs that weighed from 350 to 400 Gm. there were no toxic effects. When the animals were infected intraperitoneally with human tubercle bacilli, strain H 37 RV, the antibiotic retarded the progress of the disease.

Other preparations derived from plants have been used at various times in the treatment of tuberculosis. It is sufficient to mention the alkaloid cepharanthine, used extensively in Japan, which is said to possess a limited toxicity and to exert a decided effect on experimental as well as clinical tuberculosis.[61]

CHEMOTHERAPY OF TUBERCULOSIS FROM AN ANTIBIOTIC POINT OF VIEW

Although the results previously presented point to the production by micro-organisms of a large variety of substances that are active against the tubercle

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bacillus both in vitro and in vivo and thus offer promise as chemotherapeutic agents, streptomycin is the only one that has so far found practical application in the treatment of tuberculosis. Of a number of reports that have been submitted concerning the efficacy of streptomycin therapy in tuberculosis, only a few which have a direct bearing on the subject will be mentioned here.

To Feldman and Hinshaw[62] must go the credit for pioneering in these investigations. After being the first to demonstrate the effectiveness of streptomycin in experimental tuberculosis, they established by clinical investigations the chemotherapeutic potentialities of this drug. The criteria for a successful antituberculosis agent were summarized as follows: (*a*) the agent must be tolerated by the animal without producing irreversible physiologic derangements; (*b*) the progressive development of the disease must be reversed to nonprogressive, accompanied by resolution, fibrosis, and calcification; (*c*) the virulent infection must be eradicated, and (*d*) the effect must be produced in a reasonable time.

Clinically, streptomycin has been proved[63] to have a pronounced suppressive effect in miliary, laryngeal, meningitic, cutaneous, renal and exudative pulmonary tuberculosis. At first a small number of patients were treated, since only limited amounts and rather impure preparations of streptomycin were then available. Although the course of the disease was modified favorably and its progressive development suppressed, the result was believed to be associated with the bacteriostatic effect of the drug, and the lack of a rapid curative effect was ascribed to an insufficient bactericidal action.

As a result of treatment in the first 100 cases, Hinshaw, Feldman and Pfuetze considered themselves justified in coming to rather optimistic conclusions.[64] These can best be summarized in their own words:

> Streptomycin is an antibacterial agent which possesses the unique ability to inhibit the growth of Mycobacterium tuberculosis in vivo, both experimentally and clinically. The manifestations of tuberculosis may be suppressed both in experimental animals and in man, with at least temporary retardation of the pathologic processes as judged by objective criteria. In many instances streptomycin appears to suppress tuberculosis rather than to eradicate it, being apparently bacteriostatic rather than completely bactericidal in the concentrations which can be obtained in the tissues.

Tuberculous meningitis was definitely arrested by the use of streptomycin. Treatment consisted in the daily intrathecal administration, by lumbar or cisternal puncture, of 100 to 200 mg. of streptomycin for two to six weeks. In addition patients received by intramuscular injection 2 to 3 Gm. of the drug a day for six months. None of the patients who died in the first experiments had received intrathecal therapy, which frequently produced temporary clinical improvement that lasted only for several weeks or months.

Ulcerating tuberculous lesions of the respiratory passage, including the larynx, hypopharynx, trachea and large bronchi, have been treated in several instances, with prompt improvement of the patients in most cases; no recurrences occurred. In the prolonged treatment that is usually required for patients suffering from tuberculosis, there is the danger of an increase in resistance to the antibiotic, as was established for some of the patients. Although streptomycin did not exert a rapidly curative effect on clinical tuberculosis, it appeared to modify the course favorably by a suppressive effect on previously progressive tuberculosis.

In a discussion on the effects of streptomycin on pulmonary tuberculosis Bunn[65] has recently made the following observations: (*a*) The trend of the disease was reversed, as illustrated by the lack of spreads and exacerbations. (*b*) A majority of the patients were decidedly improved. (*c*) However, in no instance could the lesion be considered as cured. When a jury of sixteen disinterested specialists was allowed to examine the data submitted for their critical evaluation, a striking degree of agreement was obtained between the impressions of the participating investigators and those reported by the jury.

The other effects of streptomycin on the clinical course of tuberculosis were a lowering of the sedimentation rate, a dramatic reduction of fever in cases of hyperpyrexia, a pronounced gain in weight and subjective improvement. The production of sputum has usually been decidedly lessened and the cough has decreased in frequency and severity. Fourteen of a group of 47 patients gave negative sputum or gastric cultures after treatment with streptomycin.

In a group of 50 patients with miliary and/or meningeal tuberculosis who were treated with streptomycin, 50 per cent of the patients remained alive, although not all in perfect health, "but alive nevertheless, when by all previous standards, death should have taken place." Miliary lesions in the lungs have been observed by roentgen examination to disappear during the course of treatment. Total deafness occurred in 2 cases, and in 1 instance, complete depression of the bone marrow values; the latter was due to streptomycin, since its discontinuation was followed by a return of marrow function despite a progression of the miliary tuberculosis to death.

The conclusion was reached[65] that streptomycin is capable of healing certain tuberculous lesions and of serving as an adjuvant to existing forms of treatment in other types of tuberculosis. It was considered sufficiently toxic that its use must be accompanied by clinical observation and laboratory studies.

In another report on the treatment of tuberculosis with streptomycin[66] McDermott observed three significant phenomena in the majority of the tuberculous patients who received streptomycin: (*a*) a rapid, sometimes abrupt, fall in temperature and accompanying symptomatic improvement, not unlike the crisis observed in pneumococcus pneumonia; (*b*) a regression, and frequently a complete disappearance, of the pulmonary lesions demonstrable roentgenologically, and (*c*) the development of strains of tubercle bacilli which were resistant to the action of streptomycin in vitro. All three of these phenomena were most prominent in the more acutely ill patients of the hematogenous group.

In still another report[67] on the treatment of 4 children from 7 months to 3 years of age who had pulmonary tuberculosis, the daily administration of 1 Gm. of streptomycin for one month resulted in a definite improvement in the general condition of all 4 patients and regression of the appearance of pulmonary lesions.

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[62] (*a*) Feldman, W. H.; Hinshaw, H. C., and Mann, F. C.: Streptomycin in Experimental Tuberculosis, Am. Rev. Tuberc. **52**: 269-298, 1945; (*b*) footnote 55.

[63] (*a*) Hinshaw, H. C., and Feldman, W. H.: Streptomycin in Treatment of Clinical and Experimental Tuberculosis, Ann. New York Acad. Sc. **48**: 175-182, 1946. (*b*) Hinshaw, H. C.; Feldman, W. H., and Pfuetze, K. H.: Streptomycin in Treatment of Clinical Tuberculosis, Am. Rev. Tuberc. **54**: 191-203, 1946.

[64] (*a*) Hinshaw, H. C.; Feldman, W. H., and Pfuetze, K. H.: Treatment of Tuberculosis with Streptomycin, J. A. M. A. **132**: 778-782 (Nov. 30) 1946; footnote 63b.

[65] Bunn, P. A.: Streptomycin in the Treatment of Tuberculosis, in Conference of Antibiotics, Study Section, National Institute of Health, Washington, D. C., Feb. 1, 1947.

[66] McDermott, W.; Muschenheim, C., and Bunn, P.: Streptomycin in the Treatment of Tuberculosis in Humans, in Conference of Antibiotics Study Section, National Institute of Health, Washington, D. C., Feb. 1, 1947.

[67] Sanford, H. N., and O'Brien, D. E.: Streptomycin in Tuberculosis in Childhood: Results in Four Children, J. A. M. A. **133**: 691-693 (March 8) 1947.

LOOKING AHEAD

The use of streptomycin in the treatment of tuberculosis presents certain challenging problems to the microbiologist, the chemist and the clinician. Most significant of these is the development by the tubercle organism of resistance to the streptomycin, and the drug's ineffectiveness against certain forms of tuberculosis.[68] In order to overcome these limitations an intensive search must be made for other agents that would be more effective alone or combined with streptomycin. The idea suggested by Smith and McClosky[69] of utilizing the possible synergistic effect of two agents, such as "promin" (sodium p,p'-diaminodiphenylsulfone-N,N'-didextrose sulfonate) and streptomycin, appears to offer certain promising possibilities. The combination of streptomycin with certain sulfones in the treatment of guinea pigs infected with experimental tuberculosis resulted in a greater therapeutic effect than the sum of the effects of the individual components.

A turning point has now been reached in the chemotherapy of tuberculosis. Although streptomycin may not be the final answer in the treatment of this scourge of mankind—and I hope that it is not—it has opened a new path, a path of antibiotic approach to chemotherapy, an approach sought since the discovery of the bacterial nature of the disease; the control of tuberculosis may finally materialize and thus advance man one step further in his battle against disease and epidemics.[70]

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[68] Youmans, G. P.; Williston, E. H.; Feldman, W. H., and Hinshaw, H. C.: Increase in Resistance of Tubercle Bacilli to Streptomycin: A Preliminary Report, Proc. Staff Meet., Mayo Clin. **21:** 126-127, 1946.

[69] (*a*) Smith, M. I., and McClosky, W. T.: The Chemotherapeutic Action of Streptomycin and Promin in Experimental Tuberculosis, Pub. Health Rep. **60:** 1129-1138, 1945. (*b*) Smith, M. I.; McClosky, W. T.; Jackson, E. L., and Bauer, H.: Chemotherapeutic Action of Streptomycin and of Streptomycin with a Sulfone or Sulfadiazine on Tuberculosis, Proc. Soc. Exper. Biol. & Med. **64:** 261-269, 1947. (*c*) Soltys, M. A.: Antibiotic Action of Aspergillus Fumigatus Against Mycobacterium Tuberculosis, Nature, London **154:** 550-551, 1944.

[70] In order to make the literature to this subject complete, certain other references are listed, although they are not cited in the text:

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The complete literature on the use of streptomycin in experimental and clinical tuberculosis cannot be presented for the simple reason that many of these papers are only now in the process of publication.

CARCINOMA OF THE ESOPHAGUS AND THE CARDIAC END OF THE STOMACH

Immediate and Late Results of Treatment by Resection and Primary Esophagogastric Anastomosis

RICHARD H. SWEET, M.D.
Boston

Until 1938 when Phemister and his associates[1] performed the first successful transthoracic resection for carcinoma of the lower end of the esophagus invading the cardia, the prospect of treatment of this disease was dismal if not hopeless. In the majority of cases in which the tumor involved the midthoracic segment, the application of the Torek procedure[2] resulted in disappointment because of the failure of this operation to provide satisfactory palliation and its inefficacy as a method of controlling the disease.[3]

As a result of several years of experience with resection and primary anastomosis within the thorax, the entire situation has changed, and the immediate and late results of treatment by resection and primary esophagogastric anastomosis may be evaluated. The elimination of the distressing dysphagia provided by this operation has been most gratifying, and the fact that a recurrence of the tumor at the site of anastomosis is exceedingly unusual insures the best palliation available for patients afflicted with this terrible disease. With regard to the possibility of cure, although more time will be required to accumulate a large series of cases in which the operation was performed long enough ago to observe survival periods of three years or longer, it is already apparent that the three to five year survival rate will ultimately approximate that of carcinoma located in other internal viscera.

The first transthoracic resection for carcinoma of the cardia to be performed at the Massachusetts General Hospital was in 1939. From then until Jan. 1, 1947, 213 patients with carcinoma of the esophagus or cardiac end of the stomach have been operated on. Resections were performed in 141 cases. Ninety-one of these consisted in transthoracic partial gastrectomy and esophagectomy followed by primary intrathoracic esophagogastric anastomosis. These cases included 27 epidermoid lesions arising in the lower fourth of the esophagus and 64 adenocarcinomas arising from intraesophageal gastric mucosa or from the stomach itself and invading the cardia. Although an appreciable number of patients with carcinoma in the midthoracic segment of the esophagus had already been treated by resection and high intrathoracic esophagogastric anastomosis just below the aortic arch, the first patient at the Massachusetts General Hospital in whom the esophagus was pulled up from beneath the aortic arch for the performance of a supra-aortic anastomosis was treated in May

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From the surgical services of the Massachusetts General Hospital.

Read before the Section on Surgery, General and Abdominal, at the Ninety-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., June 11, 1947.

[1] Adams, W. E., and Phemister, D. B.: Carcinoma of the Lower Thoracic Esophagus: Report of Successful Resection and Esophagogastrostomy, J. Thoracic Surg. **7:** 621, 1938.

[2] Torek, F.: First Successful Resection of Thoracic Portion of Esophagus for Carcinoma: Preliminary Report, J. A. M. A. **60:** 1533 (May 17) 1913.

[3] (*a*) Sweet; R. H.: Surgical Management of Carcinoma of the Midthoracic Esophagus, New England J. Med. **233:** 1, 1945; (*b*) Carcinoma of the Midthoracic Esophagus: Its Treatment by Radical Resection and High Intrathoracic Esophagogastric Anastomosis, Ann. Surg. **124:** 653, 1946.

1944. Since that time 50 patients with carcinoma of the midthoracic segment have been treated by resection and high anastomosis. Twenty-one of these had an anastomosis just below the aortic arch, and in 29 the anastomosis was performed above the arch, frequently just below the dome of the left pleural cavity. These 50 cases were all epidermoid carcinoma histologically. Chart 1 serves to illustrate the numbers and types of cases as they have occurred from year to year.

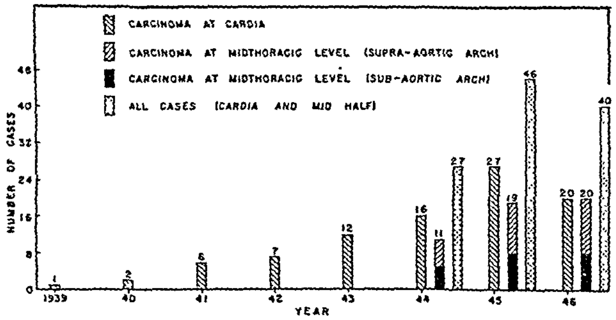

Chart 1.—Numbers and types of cases as they have occurred from year to year.

RESECTION AND PRIMARY ESOPHAGOGASTRIC ANASTOMOSIS

Technic of Operation.—No important changes have been made in the technic of resection and primary esophagogastric anastomosis used in each type of case since previous reports were made.[4] A description of the technical aspects will therefore be omitted.

Preoperative and Postoperative Care.—Little change has been made in the preparation and postoperative care of these patients since previous reports.[4a] The most important development has been the routine use of penicillin and more recently of streptomycin for the prevention of infection. The use of these antibiotics has almost eliminated the element of sepsis, which was formerly the most frequent cause of postoperative complications and the principal cause of death in the immediate postoperative period.

Other changes such as elimination of the continuous use of the inlying Levin tube, earlier ambulation, more frequent application of the operation of ligation of the superficial femoral veins to prevent pulmonary embolism and earlier administration of oral feedings are features of minor importance.

In recent months all patients have been given the benefit of consultation with a cardiologist,[5] who has taken a serious interest in the possibility of reducing the occurrence of cardiac complications. Since the problem of infection is now under better control, such complications have caused the most frequent and the most serious difficulty. The routine use of a low sodium diet to diminish the possibility of the development of acute pulmonary edema and the preoperative and postoperative administration of quinidine sulfate in an effort to prevent the occurrence of cardiac arrhythmias appear to have been highly beneficial, although a larger experience will be necessary before accurate conclusions may be drawn.

SURGICAL EXPERIENCE WITH TWO HUNDRED AND THIRTEEN CASES OF CARCINOMA OF THE THORACIC ESOPHAGUS AND CARDIAC END OF THE STOMACH

Selection of Cases for Surgical Intervention.—No patient was refused the benefit of surgical treatment because of age alone. In general, if the condition of the patient seemed good enough to offer reasonable prospect of his survival, an exploratory operation was performed. Obvious evidences of incurability such as the presence of distant metastases or involvement of the liver were taken as contraindications. In carcinoma of the thoracic segment of the esophagus a persistent fever or an intense boring pain in the back, both indicative of deep ulceration and infection, usually indicate that the condition is inoperable, and an operation was not performed in the majority of such cases. A further contraindication in the case of midthoracic lesions is bronchoscopic evidence of invasion of or fixation to the trachea or bronchi.

Resectability.—Of all the cases of carcinoma of the thoracic segment of the esophagus and cardiac end of the stomach which were observed from 1939 to January 1947, 213 were considered to be suitable for operative intervention. Chart 2 summarizes in graphic form the results of treatment in the entire series. Seventy-two lesions were hopeless from the point of view of removal and a resection was not performed. In 141 cases, however, it was possible to remove the growth and perform an esophagogastric anastomosis. Thus the resectability rate of the entire group of 213 cases was 66.2 per cent. A subdivision of the cases according to the level of occurrence of the tumor reveals that there was no significant difference between the low and the high cases with regard to resectability. Of 72 cases of carcinoma involving the midthoracic segment of the esophagus, 22 were inoperable; but a resection was performed in 50 cases, a resectability rate of 69.4 per cent. Furthermore, of the 141 cases of carcinoma of the cardia and lower part of the esophagus, 50 were not resectable and a resection was performed in 91 cases, a resectability rate of 64.5 per cent (table 1).

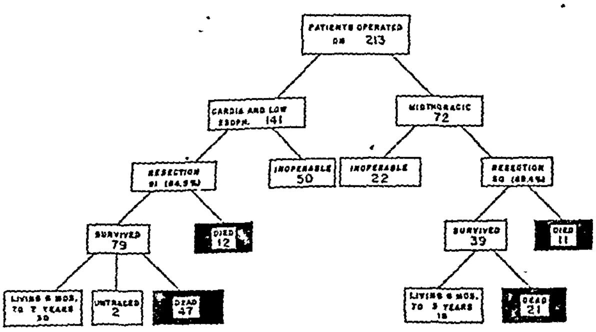

Chart 2.—Summary of results of exploratory operations or resection and primary esophagogastric anastomosis for carcinoma of the esophagus and cardiac end of the stomach. (This does not include 14 cases of carcinoma of the midthoracic esophagus treated by the Torek operation and reported previously.[3b])

Immediate Results of Operation.—Occurrence Rate of Complications and Operative Mortality: Table 2 demonstrates the immediate results of operation and the occurrence rate of complication and operative mortality. Of the 141 patients treated by radical resection and primary anastomosis 93 (66 per cent) made an uncomplicated recovery. Twenty-five other patients (17.7 per cent) in whom complications developed made an ultimate recovery, and 23 (16.3 per cent) died as a result of complications during the early postoperative period.

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[4] (a) Sweet, R. H.: Transthoracic Gastrectomy and Esophagectomy for Carcinoma of the Stomach and Esophagus, Clinics 3: 1288, 1945; (b) footnote 3b.

[5] Dr. E. B. Bland, physician at the Massachusetts General Hospital, assisted in the management of the cardiac problems in these cases.

Because of the considerably greater magnitude and seriousness of this operative procedure when it is applied to cases in which the growth lies in the midthoracic segment, as compared to that for lesions at the cardia, it is important to differentiate between the two groups, as will be apparent from a further consideration of the data presented in table 2. Thus of the 91 cases of carcinoma at the cardia, which requires a less serious operation than that necessary for the midthoracic group of lesions, 62 (68 per cent) resulted in an uncomplicated recovery. The recovery, though complete, was attended by complications in 17 cases (18.7 per cent) and in 12 cases (13.2 per cent) the complications resulted in death. In contrast to this, of the 50 cases of operation for carcinoma in the midthoracic segment of the esophagus, 31 (62 per cent) resulted in an uneventful recovery. In 8 cases (16 per cent) the convalescence was attended by complications but the patient recovered. In 11 cases (22 per cent), however, the complications were of such severity that the patient died.

Table 1.—*Resectability Rate in All Cases of Carcinoma of the Esophagus and Cardia Chosen for Surgical Intervention*

Location	Total Cases	Exploration Only	Resection	Resectability, %
Carcinoma of the midthoracic esophagus	72	22	50	69.4
Carcinoma of the cardia and lower esophagus	141	50	91	64.5
Total	213	72	141	66.2

Further analysis of the complication and mortality rates occurring in cases of operation for carcinoma located in the midthoracic segment of the esophagus reveals that the incidence of complications and the frequency of postoperative mortality is considerably greater in those cases in which a supra-aortic arch anastomosis is required than in those in which the anastomosis can be performed just below the arch. There were 21 cases of anastomosis just beneath the aortic arch, in 15 (71 per cent) of which the patient made an uncomplicated recovery; in 2 cases (9.5 per cent) complications developed but the patient recovered, and 4 patients (19 per cent) died as a result of postoperative complications. On the other hand, of the 29 cases of supra-aortic arch anastomosis only 16 (55 per cent) resulted in an uncomplicated recovery; in 6 patients (21 per cent) there developed complications, although they recovered, and 7 patients (24 per cent) died of complications. These data are presented in table 3.

ANALYSIS OF THE COMPLICATIONS OCCURRING AFTER RESECTION

Principal Complications.—Table 4 gives a list of the principal complications after resection which were recognized either clinically or as a result of postmortem examination. They are arranged according to the location of the lesion and the type of operation which was performed and include all complications previously reported[6] in addition to those which have occurred in the cases which have been added since those reports were made. It is important to emphasize once again the fact that in some cases two or more complications were observed, so that the sum of all complications is greater than the total number of complicated cases.

Table 2.—*Complications and Mortality Rate in All Patients with Carcinoma of the Esophagus and Cardia Treated by Resection with Esophagogastric Anastomosis*

Type of Operation	No. of Patients	Recovery: Uncomplicated	Recovery: Complicated	Deaths	Mortality, %
Esophagectomy for carcinoma of midthoracic esophagus	50	31	8	11	22.0
Partial gastrectomy and esophagectomy for carcinoma invading the cardia	91	62	17	12	13.2
Total	141	93	25	23	16.3

Manifestations of Infection.—There has been a relative decrease in the number of infections which have occurred since penicillin has become available for routine use, with almost complete disappearance in the low and infra-aortic anastomosis groups. Sepsis is still a factor to be reckoned with, however, in the supra-aortic anastomosis group. In 3 of this group of cases empyema developed. In 2 instances a small pocket of pus developed in the superior aspect of the chest; these were recognized only at autopsy. In 1 case (to be described later) the infection resulted from a leakage at the suture line and was a part of the widespread sepsis which was the cause of the patient's death. In the other the empyema was an insignificant observation in a patient who died of cardiac failure. In the third case there developed bilateral basal empyema accumulations, which were drained successfully by bilateral resection of ribs.

Mediastinitis.—Only 1 case of mediastinitis was observed in addition to those reported previously. This occurred in the patient in whom sepsis developed as a result of leakage at the anastomosis.

Table 3.—*Carcinoma of the Midthoracic Esophagus: Complication and Mortality Rates According to the Type of Operation*

Type of Operation	No. of Patients	Recovery: Uncomplicated	Recovery: Complicated	Deaths	Mortality, %
Esophagectomy with anastomosis below the aortic arch	21	15	2	4	19.0
Esophagectomy with anastomosis above the aortic arch	29	16	6	7	24.1
Total	50	31	8	11	22.0

Cardiac Disorders.—Since the relative decrease in the occurrence of complications which result from infection and as a result of the greater use of the supra-aortic type of anastomosis for high growths in the midthoracic

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6. (*a*) Sweet, R. H.: Transthoracic Resection of the Esophagus and Stomach for Carcinoma: Analysis of the Postoperative Complications; Causes of Death, and Late Results of Operation, Ann. Surg. **121**: 272, 1945; (*b*) footnote 3b.

segment of the esophagus, cardiac disorders have come to occupy the place of greatest numeric importance in the list of complications after resection. The relatively larger number of cases of myocardial infarction, congestive failure and cardiac arrhythmia which were observed in the patients who had carcinoma of the midthoracic esophagus as compared with those whose growth was at the cardia is obvious from table 4. This is especially true of those in whom it was necessary to dissect the growth out from beneath the aortic arch for the performance of a supra-aortic arch anastomosis. In 91 cases of low intrathoracic anastomosis there were 15 cardiac complications (16 per cent). In the 21 cases of high subaortic arch anastomosis there were 6 such complications (28 per cent), and in the 29 cases of supra-aortic arch anastomosis there were 12 cardiac complications (41 per cent). This difference is not unanticipated in view of the fact that the higher the tumor lies, the more extensive the dissection necessary in the mediastinum; moreover, the duration of the operative procedure is considerably prolonged.

TABLE 4.—*Complications Following Resection (Arranged According to Type of Operation)*

	Carcinoma at Cardia (Low Intrathoracic Anastomosis)	Carcinoma of Midthoracic Esophagus		Total
		Infra-aortic Anastomosis	Supra-aortic Anastomosis	
No. of patients operated on...	91	21	29	141
Infection				
Empyema..................	3	1	3	7
Mediastinitis...............	3	0	1	4
Wound sepsis...............	1	0	1	2
Cardiac disorders				
Myocardial infarction.......	2	1	2	5
Congestive failure..........	6	2	0	11
Auricular flutter............	2	0	1	3
Auricular fibrillation........	5	3	3	11
Pulmonary complications				
Embolism..................	2	1	0	3
Pneumonia.................	2	1	1	4
Atelectasis.................	2	1	1	4
Vascular disorders				
Thrombosis of splenic vein..	1	0	0	1
Thrombophlebitis of leg veins	4	0	0	4
Miscellaneous				
Uremia.....................	0	0	1	1
Chylous hydrothorax..	0	0	2	2
Acute parotitis..............	2	0	0	2
Leakage from anastomosis.	1	0	1	2
Surgical shock..............	0	0	1	1

Pulmonary Complications.—Pulmonary complications have been observed at about the same rate as previously reported. Two additional cases of pulmonary embolism have been observed. This makes 3 cases in 141 operations, an incidence which is rather high but not inconsistent with the advanced age and poor general condition of the majority of these patients.

Vascular Disorders.—Included among vascular disorders are a case of thrombosis of the splenic vein discovered at autopsy and 4 cases of thrombophlebitis of the veins of the leg. The latter were treated by ligation and interruption of the superficial femoral veins.

Miscellaneous Complications.—Miscellaneous complications include 1 case of uremia, 2 of chylous hydrothorax (previously reported[3b]), 2 of acute parotitis, 1 of transitory surgical shock and 2 of leakage from the anastomosis. One case of leakage occurred in an elderly man who had a resection for carcinoma of the cardia with a low intrathoracic anastomosis. It was characterized by the the transitory discharge of gastric contents through the intercostal drainage sinus. Spontaneous closure took place after a few days. In the second case the leakage was the cause of the patient's death. It resulted from technical difficulties in the performance of a supra-aortic arch anastomosis in an elderly woman who had an anomalous right innominate artery which arose from the aortic arch at its junction with the descending aorta. The presence of this large vessel at the place where the proximal segment of the esophagus had to be pulled out from beneath the aortic arch made it practically impossible to perform a satisfactory anastomosis, and leakage occurred.

TABLE 5.—*Causes of Death After Resection (Arranged According to Type of Operation)*

	Carcinoma at Cardia (Low Intrathoracic Anastomosis)	Carcinoma of Midthoracic Esophagus		Total
		Infra-aortic Anastomosis	Supra-aortic Anastomosis	
Sepsis.........................	4	0	1	5
Cardiac disorders				
Congestive failure...........	5	1	3	9
Myocardial infarction.......	1	1	0	2
Pulmonary disorders				
Pneumonia..................	0	1	0	1
Embolism..................	1	0	0	1
Atelectasis.................	0	1	0	1
Miscellaneous				
Chylous hydrothorax.......	0	0	2	2
Infarction of liver..........	1	0	0	1
Uremia......................	0	0	1	1
Total....................	12	4	7	23

TABLE 6.—*Survival After Transthoracic Partial Gastrectomy for Carcinoma of the Lower Part of the Esophagus or Cardia*

	1939	1940	1941	1942	1943	1944	1945	1946	Total	% of Those Who Survived a Given Time
Total number of operations....	1	2	6	7	14	16	29	16	91	
Hospital deaths	0	0	1	4	2	1	3	1	12	
Total analyzed	1	2	5	3	12	15	26	15	79	
Survivals										
6 months.....	1	2	5	3	10	12	21	11	65	82.0
12 months.....	1	1	4	2	8	7	15	..	38	18.0
18 months.....	1	1	3	2	7	5	9	..	28	44.0
2 years.......	1	0	2	2	5	2	..	..	12	31.5
3 years.......	1	0	2	2	4	..	..	..	9	39.0
4 years.......	1	0	2	2	..	..	..	..	5	45.5
5 years.......	1	0	2	..	..	..	..	..	3	37.5
6 years.......	1	0	..	..	..	..	..	..	1	33.3
7 years.......	1	..	..	..	..	..	..	..	1	100.0

Note: Thirty patients were operated on three or more years ago. Seven died immediately postoperatively. Of the remaining 23, 9 are living and apparently well at the end of three years, making a three year survival rate of 39 per cent.

CAUSES OF DEATH AFTER OPERATION

Table 5 lists the causes of death which occurred during the early postoperative period, arranged according to the type of operation performed. The most frequent single cause of death was congestive failure of the heart, which accounted for 9 of the 23 fatalities The relative importance of this cause among the cases of high midthoracic carcinoma with supra-aortic anastomosis is manifest. The next most frequent cause of death was sepsis, which occurred in 5 cases. In the remainder of the cases the causes were distributed widely, as follows: pulmonary embolism 1; pneumonia 1; massive pulmonary atelectasis 1; chylous hydrothorax 2; infarction of the liver 1; uremia 1, and myocardial infarction 2.

LATE RESULTS OF RESECTION

Enough time has now elapsed since the performance of the operation in many of the cases that a two year or longer period of observation is possible. Of the 141 patients on whom a resection was performed, 23 died in the hospital. The records of the 118 survivors are available for study. A successful follow-up study has been made in 116 of these cases. Two patients remain untraced and for the purpose of this study are considered as dead as of the last date on which they were known to be living

Table 7.—*Survival After Resection of Carcinoma of the Midthoracic Esophagus*

	1944	1945	1946	Total	% of Those Who Had the Opportunity to Survive a Given Time
Total no. of operations.	12	19	19	50	
Hospital deaths.........	4	3	4	11	
Total analyzed..........	8	16	15	39	
Survivals					
6 months...........	6	11	13	30	77.0
12 months...........	4	8	..	12	50.0
18 months...........	3	2	..	5	31.0
24 months...........	3	..	..	3	37.5

Although the ultimate results will probably be similar, it is desirable at the present time to separate the cases of carcinoma of the midthoracic segment from those at the cardia because there are so few of the former group of cases in which the results of operation have been observed longer than two years and none longer than three years.

SURVIVAL FOLLOWING RESECTION FOR CARCINOMA OF THE LOWER ESOPHAGUS AND CARDIAC END OF THE STOMACH

Table 6 outlines the facts regarding the survival of 91 patients operated on for carcinoma of the lower part of the esophagus and cardia. For each year, beginning with 1939 and ending with 1946, are shown the total number of patients operated on, the number of deaths in the hospital, the total survivors per year and the number of patients alive at given periods of time after operation, starting with six months and ending with the number of years which have elapsed between the year the operations were performed and the last day of 1946.

A study of this table reveals that the majority of fatalities from metastases or recurrence of the disease occur during the first two years after operation. It will be seen also that an appreciable number of patients have survived for more than two years. The three year survival rate in this series is particularly interesting. The table shows that there were 30 patients whose operation was performed three or more years ago. Seven of these patients died as a result of operation, leaving 23 who had an opportunity to survive. Nine of these 23 patients were alive three or more years after operation. This represents a three year survival rate of 39 per cent. A further inspection of the table reveals that of these 9 patients 4 are alive three years, 2 four years, 2 five years and 1 seven years after surgical intervention.

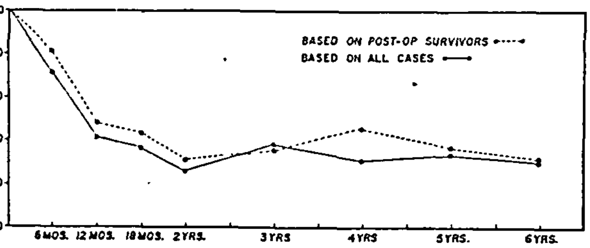

Chart 3.—Graphic representation of yearly survival rate (the per cent of those who had the opportunity to survive a given period) following resection and esophagogastric anastomosis in 91 cases of carcinoma of the cardia. Seventy-nine patients survived the operation.

A graphic representation of the percentage survival each year is shown in chart 3. One line on this chart shows the percentages of survivors following resection excluding the patients who died in the hospital immediately after the operation. For the sake of comparison, another line gives the percentages of survivors based on the entire series of patients undergoing operation, not excluding the postoperative fatalities.

These results give reason for considerable encouragement. They suggest that as with carcinoma in other organs of the body, the majority of deaths from recurrence and metastasis after resection of carcinoma of the esophagus and cardia occur during the first two years after the operation. Furthermore, if the patient survives three years his chances of further survival and possibly of cure are reasonably good (chart 3, table 6). Such a result has not been obtained by any other method of treatment of this disease.

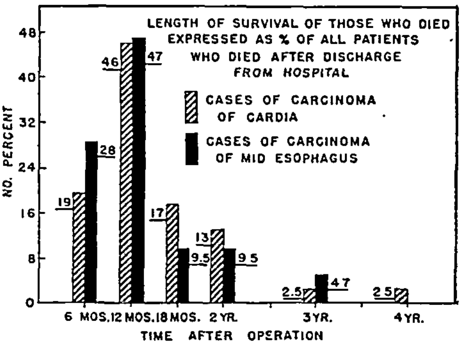

Chart 4.—*Duration of life among those patients who died following discharge from the hospital.*

SURVIVAL FOLLOWING RESECTION OF CARCINOMA OF THE MIDTHORACIC ESOPHAGUS

Holmes and Schulz [7] have shown that no patient with carcinoma of the esophagus treated by supervoltage roentgen radiation survived longer than two years. This is not much different from the survival figures of

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[7] Holmes, G. W., and Schulz, M. D.: Supervoltage Radiation: A Review of the Cases Treated During an Eight Year Period (1937-1944), Am. J. Roentgenol. **55**: 533, 1946.

Nathanson and Welch,[8] who have indicated that in untreated cases almost all patients are dead less than two years after the onset of the first symptoms.

In the study of the late results of resection in cases of carcinoma of the midthoracic esophagus, it must be remembered that the first patient in this group was treated in 1944. Although not enough time has elapsed, therefore, to make studies of the end result in this group particularly significant, table 7 serves to reveal the same tendencies as are seen in table 6, which deals with carcinoma of the lower segment of the esophagus. The large number of deaths occurring in the first twelve months is apparent, and the percentage survivals at six months, one year, eighteen months and two years after operation are similar to those of the other group. Subsequent reports will be made regarding these cases after sufficient time has elapsed.

VALUE OF THE OPERATION IN THE PALLIATION OF THE DISEASE

In carcinoma of the esophagus the most distressing symptom is dysphagia. The misery attendant on the almost complete obstruction which ultimately afflicts patients who have the disease is pathetic to observe. Any method of treatment which will alleviate this distressing symptom is gratefully received. Bougienage and roentgen radiation are notoriously ineffectual except to afford transitory periods of relief in a few cases. It has been a gratifying observation that even n those who die of recurrent or metastatic disease folowing resection with esophagogastric anastomosis there seldom develops a recurrence at the anastomotic stoma. This fact alone makes the operation worth while if the patient can thus be kept comfortable for a period of at least six months to one year.

The duration of palliation obtained by the use of this surgical procedure in cases of carcinoma of the esophagus and cardia varied from six months to four years. In the group of cases of carcinoma of the cardia, of the 46 patients who died subsequent to the operation 9 lived six months or less, 21 lived six months to one year, 8 lived twelve to eighteen months, 6 lived two years, 1 lived three years and 1 lived four years. In the group of cases of carcinoma of the midthoracic segment of the esophagus, of those who died subsequent to the operation 6 lived six months or less, 10 lived from six months to one year, 2 lived twelve to eighteen months, 2 lived two years and 1 lived three years. Chart 4 illustrates the relative length of survival in each group of cases of those patients who died subsequent to their discharge from the hospital. Because the total numbers are so different in the two groups, the length of survival is shown in each category as a percentage of the total number of deaths in that group.

As a method of palliation alone, therefore, resection and anastomosis has been proved superior to any other form of treatment yet available in the management of carcinoma of the esophagus and cardiac end of the stomach. The significant fact, however, is that many patients survive longer than a year; in some the relief from dysphagia produced by resection and esophagogastric anastomosis has been prolonged for two years or more.

ABSTRACT OF DISCUSSION

Dr. Dallas B. Phemister, Chicago: Dr. Sweet is to be congratulated on the superb operative results and on the excellent studies that he has made on the patients. The encouraging aspect of this field of surgical practice is the rapid decline in operative mortality and the extension of the field of operability to include high lesions in the esophagus and advanced lesions of the stomach, sometimes adherent to surrounding structures which must also be excised.

At first the mortality was extremely high both in Japan, where resection by thoracolaparotomy was first performed, and in this country, where transthoracic resection was first done successfully. The mortality has so declined that in experienced hands it now ranges around 15 per cent. In the last 26 operations that Dr. Adams and I have performed there were but 2 operative deaths. A discouraging aspect is that the incidence of recurrence after operation has not improved to the same extent that the operative mortality has been reduced. The frequency of recurrence varies with the location of the tumor. The most favorable location is in the lower end of the esophagus. Tumors of the esophagus narrow the lumen and produce obstructive symptoms relatively early, from which the diagnosis is sooner or later made. Metastases are commonly present by the time the patient receives operative treatment. The early metastases from carcinoma of the lower esophagus are usually located in the lymph nodes along the upper part of the lesser curvature of the stomach which are removable. This makes for a better prognosis in carcinoma of the lower esophagus. Dr. Sweet referred to the first successful one stage transthoracic resection and anastomosis, done by Dr. Adams and myself. The tumor was in this location and lymph node metastases in the lesser curvature of the stomach were removed. The patient is now well nine and one-half years after operation. Recurrence is more frequent after operation for carcinoma of the upper part of the esophagus because the neoplastic growth invades surrounding structures and metastasizes to regional lymph nodes that are difficult or impossible to remove. Carcinoma of the proximal stomach usually begins at a distance from the esophageal opening and may grow silently for as long as nine to eighteen months before it finally reaches the esophagus, produces obstructive symptoms and gets diagnosed. By that time it has often spread to surrounding structures and metastasized to regional lymph nodes, which makes for a high incidence of recurrence after resection. Early diagnosis and early surgical operation are the keynotes for future improvement.

Dr. Morris T. Friedell, Chicago: What portion of the vagus nerves is resected in Dr. Sweet's operation, and does this result in any disturbance of gastric motility?

Dr. Richard H. Sweet, Boston: The work of Dr. Phemister has always been a great stimulus to me. In this transthoracic operation, extremely long sections of the vagus nerve are resected, and I have come to disregard the vagus nerve so thoroughly in dealing with these carcinomas of the esophagus that I pay little attention to it. The nerve is usually divided just below the aortic arch, often above the pulmonary branches. It is not divided above the origin of the recurrent nerve, however. I would like to comment on something which causes concern to the thoracic surgeon, namely, that I have never been aware of any vago-vagal reflex in man while handling the vagus nerve during these operations. The motility of the stomach is of course interfered with, and yet there is something peculiar about that observation, because the roentgenologists at Massachusetts General Hospital have commented without any prompting whatever that the lack of gastric motility, about which the surgeon used to be so concerned, seems to be less and less obvious as time goes on. Why that should be, I do not know, except that the amount of dissection which I now do toward the antrum and the duodenal end is much greater than it used to be.

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[8] Nathanson, I. T., and Welch, C. E.: Life Expectancy and Incidence of Malignant Disease, Am. J. Cancer 28:40, 1936.

STREPTOMYCIN IN OCULAR INFECTIONS

JOHN G. BELLOWS, M.D.
and
CHESTER J. FARMER
Chicago

The adoption of streptomycin for the treatment of various infections caused by organisms either insensitive or resistant to sulfonamide compounds and penicillin has aroused much interest among ophthalmologists. Streptomycin has been shown by in vitro and in vivo experiments to be bacteriostatic against certain gram-positive organisms as well as against a wide variety of hitherto resistant gram-negative forms.

The literature on the use of streptomycin in ocular infections is extremely meager. Owens[1] reported 1 case of a severe corneal infection caused by Escherichia coli, which responded satisfactorily to the local application of streptomycin. Alberstadt and Price[2] treated 9 patients with corneal infections with streptomycin applied locally. In spite of the fact that adequate bacteriologic data were unobtainable, they concluded that the addition of this antibiotic to the usual form of treatment definitely shortened the healing time.

Experiments undertaken by Leopold and Nichols[3] have demonstrated that streptomycin appears in the conjunctiva, sclera, extraocular muscles and aqueous humor of rabbits when it is administered in systemic dosages of 10,000 micrograms per kilogram of body weight. In order that streptomycin might appear in detectable amounts in the cornea, vitreous, chorioretinal tissues and optic nerve, 100,000 micrograms per kilogram of body weight were required. These huge systemic dosages, which were required to obtain a detectable but probably therapeutically inadequate level in these tissues, might under prolonged treatment produce neurotoxic disturbances in man. Fortunately for the ophthalmologist high concentrations of streptomycin in the conjunctival sac may be instantaneously achieved by simple instillation. Furthermore, satisfactory concentrations are readily obtained in the aqueous in the presence of abraded or inflamed corneas and may be obtained even in the presence of an intact cornea if a wetting agent or iontophoresis is employed.[4] Even in the vitreous high concentrations may be safely achieved by the injection of amounts up to 500 micrograms of streptomycin in 0.1 cc. isotonic sodium chloride solution.[4a]

The purpose of this paper is to present results of streptomycin therapy in experimental and clinical ocular infections.

I. THE EFFECTIVENESS OF STREPTOMYCIN THERAPY IN EXPERIMENTAL OCULAR INFECTIONS WITH CERTAIN ORGANISMS

A. Treatment of Experimental Corneal Ulcer Due to Bacillus Pyocyaneus.—Up to recent times the treatment for clinical or experimental ulcer of the cornea due to Bacillus pyocyaneus has been unsatisfactory. Sulfapyridine administered orally to the experimental animal has been ineffective prophylactically, causing only a decrease in the severity of the infection.[5] When sodium sulfacetamide was used locally as a prophylactic agent,[6] the administration of it in one hour prevented 11 of 17 infections; after 5 hours, 5 of 12, and after 12 hours, only 2 of 12. Von Sallmann,[7] employing the same organism and sulfadiazine administered orally and locally by means of iontophoresis, was successful in preventing infection in 90 per cent of the inoculated animals.

Experiments were undertaken to determine the effectiveness of streptomycin in similarly produced corneal ulcers. The strain of B. pyocyaneus used was one which produced uniform infections of the cornea in rabbits. In a series of normal rabbits anesthetized by intravenous injections of pentobarbital sodium, an area of each cornea was delineated by a 4 mm. trephine and the epithelium within this area was abraded by a knife. Fluorescein was employed to determine the completeness of abrasion, after which a cotton applicator moistened in a twenty-four hour broth culture of B. pyocyaneus was forcibly rubbed against the abraded area of both eyes for sixty seconds.

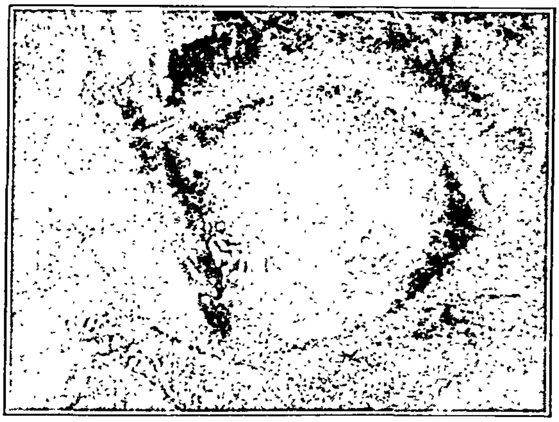

Fig. 1.—Pyocyaneus infection of cornea untreated.

Streptomycin was applied to the right eye at two, four, six, eight and twenty-four hours after inoculation, while the left eye was reserved as an untreated control. Treatment consisted of three instillations of an isotonic sodium chloride solution containing 10,000 micrograms of streptomycin per cubic centimeter at two hour intervals after the periods previously indicated.

Our experiments demonstrated that streptomycin therapy, when applied within six hours, in all cases prevented infection of the cornea. The control eyes uniformly progressed to complete destruction of the cornea. These results indicate the great value of streptomycin against B. pyocyaneus in infections of the cornea. Up to the present time, streptomycin is unexcelled as a therapeutic agent in this type of infection (figs. 1 and 2).

B. Treatment of Experimental Streptococcic Infection of Vitreous.—Attempts to prevent or influence experimental infections of the vitreous had been unsuc-

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From Northwestern University Medical School.

The work described in this paper was done under a contract between the Navy Program for Basic Research and Northwestern University.

Read before the Section on Ophthalmology at the Ninety-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., June 12, 1947.

[1] Owens, W. C.: Streptomycin Treatment of Corneal Infections, Am. J. Ophth. **29:** 1007-1009 (Aug.) 1946.

[2] Alberstadt, N. F., and Price, A. H.: Streptomycin for Corneal Ulcer, Am. J. Ophth. **29:** 1106-1111 (Sept.) 1946.

[3] Leopold, I. H., and Nichols, A.: Intraocular Penetration of Streptomycin Following Systemic and Local Administration, Arch. Ophth. **35:** 33-38 (Jan.) 1946.

[4] (*a*) Bellows, J. G.; Burkholder, M., and Farmer, C. J.: to be published. (*b*) Leopold and Nichols.[3]

[5] Joy, H. H.: Treatment of Experimental Bacillus Pyocyaneus Ulcer of Cornea with Sulfapyridine, Arch. Ophth. **27:** 1135-1164 (June) 1942.

[6] Robson, J. M., and Scott, G. I.: Local Effectiveness of Sodium Sulphacetamide (Albucid Soluble) in Treatment of Experimental Ulcers of the Cornea, Brit. M. J. **1:** 5-8 (Jan. 3) 1942.

[7] von Sallmann, L.: Sulfadiazine Iontophoresis in Pyocyaneus Infection of Rabbit Cornea, Am. J. Ophth. **25:** 1292-1300 (Nov.) 1942.

cessful until von Sallmann and his co-workers[8] and Leopold[9] were able to check the progress of a hemolytic Staphylococcus aureus infection and Klebsiella pneumoniae type III infection by means of the intravitreous injection of penicillin. The present experiment was to determine the effectiveness of streptomycin therapy with experimental beta-hemolytic streptococcic infection of the vitreous. For this purpose the vitreous of each eye of a series of rabbits was inoculated with 0.1 cc. of a twenty-four hour broth culture of Streptococcus pyogenes strain C 203 diluted to 1 : 10,000 in isotonic sodium chloride solution (plate count 1,000 to 2,000 organisms per cubic centimeter). This organism was observed to be sensitive to 10 micrograms of streptomycin in 1 cc. of solution.

These rabbits were treated either systemically or by injection of streptomycin into the vitreous. The systemic administration was in the form of (1) continuous intravenous drip of 100,000 micrograms of streptomycin solution per kilogram of body weight over a period of six hours or (2) intramuscular injection of a similar amount of the agent emulsified in a sterile preparation of cholesterol derivatives in peanut oil with 2 per cent beeswax ("pendil improved"); the drug was given either as a prophylactic or therapeutic measure. The intravitreal injections of streptomycin were administered either simultaneously or two, four, six, eight or twenty-four hours after the inoculation. For intravitreous injection 0.1 cc. of an isotonic solution of sodium chloride containing 250 to 1,000 micrograms of streptomycin per cubic centimeter was used

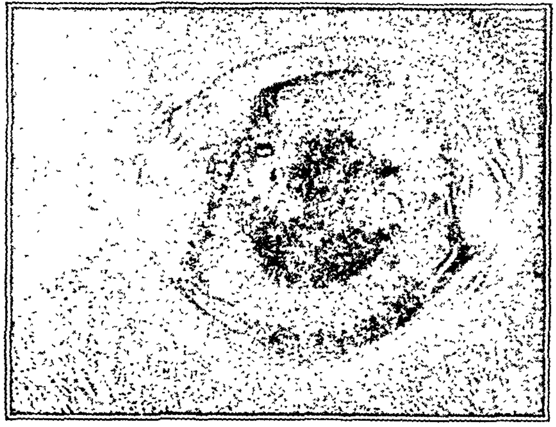

Fig. 2.—Pyocyaneous infection of cornea treated with streptomycin.

In these experiments neither form of systemically administered streptomycin prevented the development of a vitreous abscess. However, the external inflammatory manifestations were far less pronounced in the systemically treated animals than in untreated controls. Animals receiving intravitreous injections of 100 to 200 micrograms of the less purified streptomycin, or as little as 25 micrograms of the streptomycin–calcium chloride complex did not develop a vitreous abscess if treated within six to eight hours after the inoculation. On the other hand, vitreous infection resulting in eventual abscess occurred in the untreated control eye or in those treated with less than the previously specified amounts of streptomycin (fig. 3).

As noted by Leopold and Nichols, streptomycin enters the vitreous with difficulty. Concentrations of but 2 units of the agent per gram of vitreous could be obtained following a single intramuscular injection of 100,000 units of streptomycin per kilogram of body weight. Since the in vitro sensitivity of the organism employed by us was shown to be 10 micrograms per cubic centimeter, it is easy to understand why the systemic administration of the antibiotic was ineffective. The observed higher concentrations reported by Leopold and Nichols as occurring in the conjunctiva, sclera, extraocular muscles and aqueous humor explains the localization of the infection to the vitreous. On the other hand, the direct intravitreal injection of streptomycin in the concentrations and within the time indicated effectively prevents infection. Our experimental results parallel those of Leopold and of von Sallmann, who demonstrated that vitreous infection with staphylococci or pneumococci were arrested if intravitreal injections of penicillin were made within eight hours after inoculation.

II. THE CLINICAL APPLICATION OF STREPTOMYCIN IN OCULAR INFECTIONS

In 23 cases of ocular infections treated with streptomycin, 7 were acute conjunctivitis, 10 were chronic conjunctivitis, 5 were corneal infections and 1 was a postoperative intraocular infection.

A. Acute Conjunctivitis.—The 7 cases of acute conjunctivitis included 1 primary meningococcic conjunctivitis, the organism being identified as Neisseria intracellularis group IIa. There was 1 patient with almost a pure culture of Bacillus subtilis and another with a pure culture of diphtheroids. Hemolytic staphylococcus albus and alpha hemolytic streptococci were found in 1 case; hemolytic Staph. albus alone in 1 case, and hemolytic Staph. albus with diphtheroids in another. In 1 patient cultures and smears were negative. The general procedure for all patients was to give streptomycin drops (10,000 micrograms per cubic centimeter) at one hour intervals during the waking hours (eight to nine applications a day) and to continue the treatment for eight days.

The meningococcic conjunctivitis improved in twenty-four hours, and the eye appeared normal at the end of four days (figs. 4 and 5). The infection due to B. subtilis showed improvement in forty-eight hours, and the redness was entirely gone by the seventh day. The conjunctiva from which the pure culture of diphtheroids was obtained was greatly improved by the third day and entirely well on the seventh day. In the case in which there was a mixed infection due to hemolytic Staph. albus and alpha hemolytic streptococcus, improvement was evident in forty-eight hours. The patient in whom infection was due to hemolytic Staph. albus alone recovered completely by the seventh day, and the patient with acute conjunctivitis in which no organisms were isolated recovered on the fourth day.

B. Chronic Conjunctivitis.—There were 10 cases of chronic conjunctivitis. The duration of the disease prior to streptomycin therapy varied from one month to several years. In 3 of these the smears and cultures were negative, and treatment with streptomycin produced no noticeable change in symptoms. In 1 case there was a chalazion associated with a decided conjunctival inflammation of both the upper and the lower lids. Culture from the conjunctiva revealed two colonies of hemolytic Staph. aureus, three colonies of alpha Strep. fecalis and five colonies of diphtheroids. Streptomycin drops, although causing the conjunctival sac to become sterile, produced no appreciable improvement in the appearance of the eye in eight days. In another patient hemolytic staphylococci and diphtheroids were found. After forty-eight hours of therapy a culture from the conjunctiva was negative. There was pronounced improvement both objectively and subjectively. Treatment was continued for eight days. However, three weeks after the cessation of treatment there was a recurrence of symptoms. In 1 case pneumococci were found. After six days of streptomycin therapy cultures from the conjunctivas became negative. However, the conjunctivas remained red and the discomfort continued even after ten days of therapy, after which treatment was discontinued. In a chronic case of fifteen years' duration, a culture of material from the right eye exhibited the growth of one colony of coagulase-negative Staph. aureus, while that from the left produced eight colonies. After three days of streptomycin therapy cultures exhibited no growth and subjective symptoms were improved. However, the palpebral conjunctivas were still hyperemic even after ten days of treatment. A smear taken from another patient revealed a single gram negative extracellular organism, but the cultures were negative. Streptomycin therapy was stopped after forty-eight hours because the patient stated that the treatment "made the eye feel and look worse."

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[8] (*a*) von Sallmann, L.; Meyer, K., and Di Grandi, J.: Experimental Study of Penicillin Treatment of Ectogenous Infection of Vitreous, Arch. Ophth. **32**: 179-189 (Sept.) 1944. (*b*) von Sallmann, L.: Penicillin Therapy of Infections of the Vitreous, ibid. **33**: 455-462 (June) 1945.

[9] Leopold, I. H.: Intravitreal Penetration of Penicillin and Penicillin Therapy of Infections of the Vitreous, Arch. Ophth. **33**: 211-216 (March) 1945.

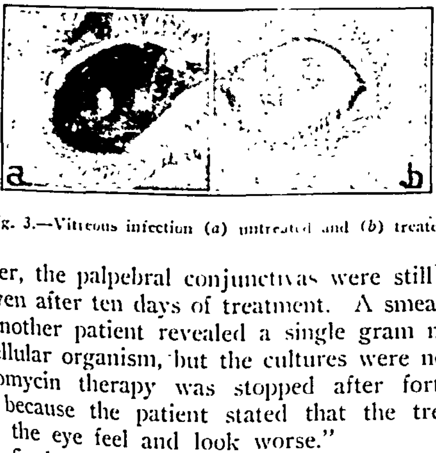

Fig. 3.—Vitreous infection (a) untreated and (b) treated.

The final test of the clinical application of streptomycin was in a patient with myotonic dystrophy with typical cataracts. He had suffered from chronic conjunctivitis for many years. There were scars in the palpebral conjunctivas of the two upper lids and in the vessels in the corneas. Conjunctival scrapings which were dyed with Giemsa's stain failed to reveal any inclusion bodies. Cultures were negative. Local streptomycin therapy caused a decided decrease in the conjunctival congestion and secretion within seven days.

C. Corneal Infections.—There were 5 cases of corneal disease. One patient had corneal infection which, despite treatment for three months with fever therapy, sulfonamide drugs, penicillin and delimiting keratotomy, continued to progress. Before local streptomycin therapy was instituted smears and cultures were taken from the ulcer. These failed to exhibit the growth of any organisms. Within five days the cornea no longer stained with fluorescein, the margins of the lesions became more distinct and there was a pronounced decrease in the generalized congestion.

The second case was that of a white man aged 40, who was in a poor state of general nutrition. There was a slowly progressive corneal infiltration of the left eye accompanied by exudates in the anterior chamber. His previous treatment had consisted in attempts to improve the general nutrition and local treatment in the form of atropine, sulfonamide compounds, penicillin by drops and iontophoresis and delimiting keratotomy. Cultures taken prior to streptomycin therapy revealed ten colonies of diphtheroids and forty colonies of a gram-negative rod. Local streptomycin therapy for ten days did not change the course of the disease.

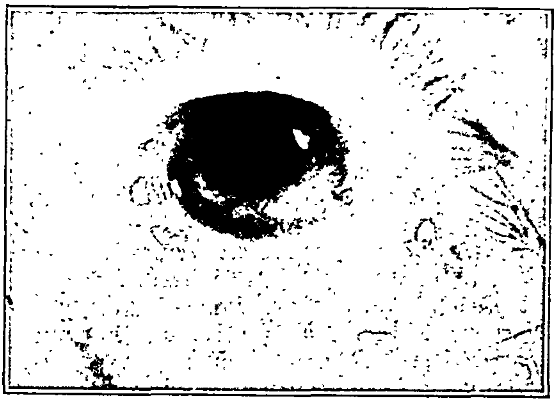

Fig. 4.—Meningococcic conjunctivitis before treatment.

The third corneal infection was a long standing, active, tuberculous keratitis having characteristics of both phlyctenular and interstitial types. Atropine therapy and tuberculin desensitization had been without effect. Streptomycin was administered in the form of drops and iontophoresis without apparent improvement in ten days, at which time treatment was discontinued.

In the fourth case a Negro man had a deep grayish white infiltrate in the cornea. Four days of fever therapy and local instillations of atropine failed to stop the progress of the disease. A culture taken from the cornea at this time revealed twenty colonies of hemolytic Staph. albus and one hundred and thirty colonies of diphtheroids. Streptomycin in the form of drops was administered at two hour intervals. A definite improvement was noticed in forty-eight hours.

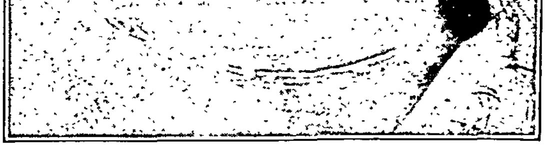

Fig. 5.—Meningococcic conjunctivitis after four days of streptomycin therapy.

The fifth patient was admitted to the hospital on the service of Dr. I. Puntenney. There was a severe rapidly progressive pyocyaneus infection of the cornea, which had been unresponsive to sulfonamide drugs. At the beginning of the third day of the infection 2 or 3 drops of the solution of streptomycin were instilled into the infected eye every thirty minutes during the waking hours and every two hours at night. Any further spread of the corneal lesion was blocked by the use of streptomycin, and a pronounced improvement in the appearance of the eyeball was evident at the end of forty-eight hours. The redness disappeared at the end of the seventh day.

D. Intraocular Infection.—A Japanese patient on Dr. B. Cushman's service was seen on the second postoperative day after an intracapsular extraction. Examination revealed a well defined conjunctival congestion, but the cornea was fairly clear. In the pupillary area a yellowish gray exudate was present. Cultures revealed a hemolytic Staph. aureus. It was recommended that penicillin and streptomycin be administered by means of iontophoresis. On the fourth day 1,000 Oxford units of penicillin and 500 micrograms of streptomycin were injected into the anterior chamber. The course of the infection was not influenced by these antibiotics.

COMMENT

In the evaluation of streptomycin therapy the rapidity of improvement must be considered in both acute and chronic ocular infections. In acute infections if the period of morbidity under streptomycin therapy is constantly less than that observed in treatment by earlier conventional methods, it may be assumed that the drug was responsible for this favorable effect. In chronic infections which have resisted other forms of therapy, if rapid improvement follows the use of streptomycin it is at least suggestive that the improvement is attributable to this agent. Ideally, observations on the therapeutic effectiveness of a new agent should be based on cases of bilateral infection which permit adequate controls, the more severely infected eye receiving the therapeutic agent while the other receives an equal amount of the vehicle. This was attempted in 2 of the cases reported herein without significant results.

The use of streptomycin instead of penicillin in certain infectious due to organisms known to be sensitive to penicillin is justified on the basis of Robinson's[10] *observations and of our determination of the sensitivity* of the organisms. Furthermore, it would be valuable to be able to use another drug in the treatment of those persons who are hypersensitive to penicillin in cases in which the organism has acquired a resistance to penicillin, or in combination with penicillin in some instances of mixed infections.

As anticipated from Robinson's in vitro experiments, which demonstrated the high degree of sensitivity of the meningococcus to streptomycin, the acute meningococcic conjunctivitis responded rapidly to treatment with this antibiotic. The improvement noted in the other 6 cases of acute conjunctivitis produced by a variety of organisms indicates that streptomycin may be useful in the treatment of some forms of this disease. However, the value of this antibiotic cannot be definitely established until many more instances have been observed, particularly in cases of bilateral infection with adequate controls established by the procedure previously suggested.

In all 6 cases of chronic conjunctivitis in which organisms were found in the conjunctivas just prior to streptomycin therapy, the cultures became sterile a few days later. However, the clinical appearance in some instances was unchanged, suggesting that other than bacterial causes were active in continuing the inflammation. Streptomycin exerted a favorable influence in the case of chronic conjunctivitis with the clinical characteristics of trachoma.

In our animal experiments streptomycin was found to be completely effective in the prevention of corneal infections due to B. pyocyaneus if used within six hours. Its value in this disease has been further established by our clinical observations in the case of B. pyocyaneus infection of the cornea of forty-eight hours' duration which responded promptly to streptomycin. The favorable influence of streptomycin in the rapidly advancing infection of the cornea (fourth case) from which hemolytic Staph. albus and diphtheroids were cultured is also noteworthy. In the slowly advancing corneal ulcer which had progressed in spite of all other forms of treatment it is significant that improvement occurred concomitantly with the initiation of streptomycin therapy.

The failure of streptomycin in the corneal ulcer in which diphtheroids and numerous gram-negative rods were found may be partially explained by the general debilitation of the patient.

Finally, the keratitis which had characteristics of both the phlyctenular and interstitial types also failed to improve, even with intensive streptomycin therapy. If the condition was entirely phlyctenular in nature no improvement could be expected, since this type of keratitis is due to a hypersensitization to tuberculin protein.

Von Sallmann in both clinical and animal studies reported the refractory nature of advanced infections of the vitreous to penicillin. This is also true with streptomycin, for as shown in the early part of this paper no arrest of the infection occurred in rabbits if streptomycin therapy was instituted eight hours after inoculation with the infective organism. This explains the failure of the well established postoperative intraocular infection to respond to antibiotics. However, if postoperative intraocular infections can be recognized within the specified time limits in which the antibiotic is effective, the injection of the agent directly into the eye might arrest the infection and thus save the eye.

From our clinical observations it is evident that many organisms are soon eliminated from the conjunctiva and cornea by repeated instillations of streptomycin solution in the recommended concentrations. In many instances recovery from certain types of acute and chronic external ocular infections will follow the disappearance of the organisms. Relapses occur if treatment is stopped too soon. Inflammatory conditions in which organisms are not isolated cannot be expected to respond to streptomycin therapy, *nor do infectious dis-*

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[10] Robinson, H. J.: Streptomycin and Streptothricin: The Absorption, Excretion, and *Chemotherapeutic Properties; Antibiotics*, Ann. New York Acad. Sc. 48: 119-141 (Sept.) 1946.

cases in which other contributing factors are present, such as chalazion or general debilitating diseases, respond to streptomycin therapy alone.

SUMMARY

The penetrability of the cornea to streptomycin may be increased by abrasion, inflammation, ion transfer and wetting agents.

Streptomycin is safe and nonirritating to the surface of the eyeball in concentrations up to 10,000 micrograms per cubic centimeter. Higher concentrations delay the regeneration of the epithelium and promote scarring and vascularization of the cornea.

Intraocular injections of 500 micrograms of streptomycin in 0.1 cc. of isotonic sodium chloride solution are well tolerated. However, as little as 25 micrograms of streptomycin is effective in the prevention of experimental beta hemolytic streptococcic infections of the vitreous if the drug is injected within six to eight hours after inoculation.

Experimental corneal infections due to Bacillus pyocyaneus are completely prevented if within six to eight hours after inoculation three instillations of streptomycin drops (10,000 micrograms per cubic centimeter) are made at two hour intervals.

Repeated instillations of 10,000 micrograms of streptomycin in 1 cc. of isotonic sodium chloride solution sterilizes the conjunctival sac in most cases of acute and chronic conjunctivitis.

Clinically streptomycin was employed in 23 cases of ocular infection. In 2 cases it was exceptionally effective, namely, a primary meningococcic conjunctivitis and a B. pyocyaneus infection of the cornea.

There is definite evidence that in most cases both of acute and of chronic infections of the conjunctiva and cornea organisms are rapidly eliminated by streptomycin therapy; in the absence of complicating factors healing follows rapidly in many instances.

ABSTRACT OF DISCUSSION

DR. PARKER HEATH, Detroit: The evaluation of the merits of a new antibiotic in the field of ocular therapy is no easy task. There are certain requisites, such as controlled laboratory testing and extended and versatile clinical investigation. Both of these approaches should be made by open, truth-seeking minds. Dr. Bellows and Dr. Farmer are reporting along these avenues. Their laboratory studies support those of Leopold and Nichols, that effective concentrations of streptomycin in ocular tissue could not be had by practical, systemic application and that local use was effective in the antibiotic range of the drug, local use by topical application and supported by wetting agents, corneal scuffing or iontophoresis as advocated by von Sallmann (10,000 micrograms per cubic centimeter at two hour intervals). In the vitreous, the most effective minimal concentration followed direct injection of 100 to 200 micrograms of the sodium and 2.5 micrograms of the calcium chloride complex. All this is consistent with other reported studies by Leopold and von Sallmann on the use of sulfonamide compounds or penicillin. While the clinical series of the authors is too small to be conclusive, good clinical hints are extractable. Streptomycin seems unusually effective in meningococcic conjunctivitis and keratitis due to Pseudomonas aeruginosa—the latter being based on animal experimentation and 1 human case. Hemolytic Staphylococcus albus and alpha hemolytic Streptococcus were in the range of the drug. Owens and Alberstadt and Price have reported success from local use. The failure of response in active ocular tuberculosis in 1 case is consistent with the experiences of others. The first ray of hope in a chemotherapeutic attack on ocular tuberculosis is that recently reported by Woods, using "promin" (sodium p,p′-diaminodiphenylsulfone-N,N′didextrose sulfonate) and "promizole" (4,2′-diaminophenyl-5′-thiazolylsulfone) in experimental ocular tuberculosis in immune allergic rabbits. Bellows and Farmer have reported a single case of postoperative infection which failed to yield to both iontophoresis and streptomycin on the second day and injections into the anterior chamber on the fourth day. This is not conclusive, because of the lateness of the treatment. Ophthalmic surgery has a low incidence of postoperative infection. But the complication is a probability which no one can completely deny. The authors have shown early effective concentration to be necessary. This is in support of my practice of inspecting eyes after intraocular surgical treatment within twenty-four hours. In my experience, the complications from systemic use of streptomycin are real—those from local use are not so significant. Locally there is delayed epithelization of the cornea and some promotion of scar. A confusing probability is that of adaptability of the infectious organism to streptomycin.

DR. IRVING H. LEOPOLD, Chicago: For many years Dr. Bellows and his associates have contributed substantially to our knowledge of the new chemotherapeutic agents. He has studied both experimentally and clinically numerous sulfonamide compounds, penicillin and now streptomycin. He is therefore in an excellent position to evaluate carefully any new anti-infectious agent. The evidence accumulated by Dr. Bellows and Dr. Farmer seems to favor the local methods of applying streptomycin over systemic administration for many types of ocular infections. Conjunctivitis, keratitis and infections of the vitreous are examples. There are many reasons for this. Systematically administered streptomycin is not free of toxic properties. Monkeys receiving injections of 50 to 100 mg. per kilogram of body weight showed a peculiar type of fatty infiltration of the kidneys and of the liver. The same dose caused proteinuria and some reduction of renal function. Dogs given similar doses occasionally had labyrinthine disturbances, a phenomenon that has also been noted in human beings and probably represents streptomycin's most serious untoward effect. Local tissue toxicity, however, is not pronounced. It is true that application of 1,250 units of streptomycin to the cerebral cortex of cats and monkeys has caused convulsive manifestations in 30 per cent of the animals tested, but these effects were less strong than those produced by comparable amounts of penicillin—as judged by clinical and encephalographic observations. Streptomycin has a low toxicity for spleen in tissue culture and is only mildly inhibitory for fibroplasts and epithelial cells. One of the chief disadvantages of streptomycin is the ease with which organisms develop a resistance to this drug. This is less likely to occur if the concentrations of the streptomycin in the infected tissues are high and maintained. It has been shown that higher concentrations can be obtained in most of the ocular tissues by local administration than by the systemic route. This is certainly the case for the conjunctiva, cornea, anterior chamber, vitreous humor and lens. To recommend local therapy for inflammations of ocular tissues does not mean that the systemic route may not also be successful in some types of ocular infections but simply that systemic therapy is not necessary for ocular infections not associated with systemic disease, may be more dangerous and, in addition, is more expensive, as tremendously greater quantities are required.

DR. JOHN G. BELLOWS, Chicago: I wish to thank Dr. Heath for his interesting remarks. He and Dr. Leopold mentioned that the organisms develop resistance to streptomycin readily. An organism that is at first sensitive to streptomycin may become within twenty-four hours resistant to it. Dr. Leopold has called our attention to the dangers inherent in the systemic use of streptomycin. Hypersensitization is relatively uncommon with the external application of streptomycin. This is indicated by the development of sensitization in only 1 of 30 cases in which this antibiotic was used.

THE CONTROL OF EPILEPSY

An Interim Report on 3-Methyl-5, 5-Phenylethylhydantoin and Phenobarbital Therapy

ANTHONY E. LOSCALZO, M.D.
New York

A preliminary report by me in 1945[1] dealt with a two year study of a new anticonvulsant, 3-methyl-5, 5-phenylethylhydantoin[2] and phenobarbital in a group of patients suffering from epilepsy of unknown or organic etiology. This new drug reduced grand mal seizures approximately 60 per cent, as compared to previous medications with diphenylhydantoin sodium and phenobarbital. It is important to note that phenobarbital was used in combination with both diphenylhydantoin sodium and 3-methyl-5, 5-phenylethylhydantoin, thus assuring a valid comparison of the two drugs. The incidence of side effects with the latter as compared with diphenylhydantoin sodium was strikingly low.

It was suggested in the first report that further investigations were indicated and necessary for more complete evaluation. This interim report is a continuation of the preliminary studies and encompasses an additional eighteen months of observation on the same patients and 51 new patients.

Since the first publication additional experimental data has accumulated. Swinyard and Goodman,[3] studying a group of hydantoinates in rats, introduced two new laboratory technics:

> The toxic dose (*T*) was taken as that just causing observable neurological deficit or other untoward effect. The protective dose (*P*) was that just required to abolish tonic extensor components of maximal electroshock seizures produced by current intensities five times threshold.

In this report by Swinyard and Goodman[3] it was noted that the protective index (*T/P*), which is the ratio of the toxic dose to the protective dose, has a value of 12 for 3-methyl-5, 5-phenylethylhydantoin and 2 for diphenylhydantoin sodium. In the same report it was stated that the percentage change in normal electroshock threshold was plus 27 for 3-methyl-5, 5-phenylethylhydantoin and only plus 2 for diphenylhydantoin sodium.

These authors also observed that the dose (milligram per kilogram intraperitoneally) for protection against maximal electroshock seizures was 5 mg. with 3-methyl-5, 5-phenylethylhydantoin and 50 mg. for diphenylhydantoin sodium.

These data suggest in animals pronounced advantages for 3-methyl-5, 5-phenylethylhydantoin and thus aid in substantiating the clinical observations in these studies up to this time.

CHEMICAL NOTES ON 3-METHYL-5, 5-PHENYLETHYLHYDANTOIN

The structural formulas (figs. 1, 2 and 3) show the close chemical similarity and relationship between some of the most commonly used anticonvulsants, including 3-methyl-5, 5-phenylethylhydantoin, on which this clinical study is based.

Diphenylhydantoin sodium and 3-methyl-5, 5-phenylethylhydantoin are both hydantoin derivatives. They may be considered as derivatives of a cyclic condensation product of urea and acetic acid, whereas phenobarbital is a derivative of the cyclic condensation product of urea and malonic acid.

As to the chemical difference between diphenylhydantoin sodium and 3-methyl-5,5-phenylethylhydantoin, it is noted that one phenyl group of the diphenylhydantoin sodium is replaced by an ethyl group in 3-methyl-5, 5-phenylethylhydantoin; in addition, one hydrogen atom, bound to nitrogen, is replaced by a methyl group in the new drug. Furthermore, diphenylhydantoin sodium is offered in the form of the sodium compound, whereas 3-methyl-5, 5-phenylethylhydantoin is sodium-free and has the chemical characteristics of a weak acid.

CLINICAL STUDIES

Of the 67 cooperative patients studied,[4] 35 were females and 32 males; 16 patients were of the original group reported in the preliminary studies of 1945. Electroencephalograms were performed on 54 patients; pneumoencephalograms on 12, roentgen examination of the skull on 28, and exploratory craniotomy on 5. The Wassermann test, complete blood count, urinalysis and blood chemical studies (dextrose, urea nitrogen and creatinine) were done routinely on all patients. Blood calcium, phosphorus studies, dextrose tolerance tests and basal metabolism determinations were ordered when indicated. All patients were subjected to a complete neuropsychiatric check-up. The history and physical examination forms of the American Epilepsy League are standard in this clinic.

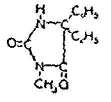

Figure 1.

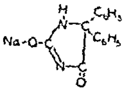

Figure 2.

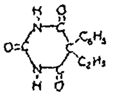

Figure 3.

Fig. 1.—"Mesantoin," 3-methyl-5,5-phenylethylhydantoin.
Fig. 2.—"Dilantin sodium," Diphenylhydantoin sodium.
Fig. 3.—Phenobarbital, phenylethylbarbituric acid.

Each patient was seen at the clinic once each week for the first few weeks and then every second week or monthly, depending on the severity and frequency of the attacks. Each patient was instructed to bring in a written record of the date, time and severity of each convulsion as well as a description of any untoward symptoms that were experienced. At each visit these facts were transcribed and further histories taken and physical examinations made when indicated. When patients failed to attend a clinic a postal card was mailed asking them to return. Data on the noncooperative patients are excluded from this study.

The age range of the sixty-seven patients is given in table 1, and the duration of epilepsy in table 2. The duration of treatment with 3-methyl-5, 5-phenylethylhydantoin is shown in table 3. According to the Lennox Classification,[5] the cases fall into one of the groups shown in table 4.

The figures represent the predominant type of seizure in each patient, but all patients, except one traumatic jacksonian, suffered from grand mal and many of the patients, in addition, had petit mal.

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[1] Loscalzo, A. E.: *Treatment of Epileptic Patients with a Combination of 3-Methyl 5, 5 Phenylethyl-Hydantoin and Phenobarbital (Preliminary Report)*, J. Nerv. & Ment. Dis. **101:** 537 (June) 1945.

[2] This drug is available as "mesantoin," a product supplied by Sandoz Chemical Works, Inc.

[3] Swinyard, E. A., and Goodman, L. S.: Laboratory Assay of Anticonvulsant Potency of Some Hydantoinates, Federation Proc. **5:** 205 (Feb.) 1946.

[4] From the Clinic for Convulsive Disorders, Columbus Hospital; Dr. David J. Impastato, Director.

[5] Lennox, W. G.: The Treatment of Epilepsy, M. Clin. North America **29:** 1114 (Sept.) 1945.

The probable etiologic basis for the disease is given in table 5. In the group of 51 cases of undetermined cause are included 5 cases with positive neurologic observations suggestive of chronic degenerative disease, 1 case of chronic alcoholism, 1 case of neurosyphilis (latent) and 1 case of mild manic-depression. This also holds true for some cases in which the electroencephalograms showed possible epileptogenous areas. It might be argued that the etiologic basis was evident in some of these cases, but there were so many controversial points that it was decided to place them in the group of undetermined cause. The 3 cases of cortical degeneration were proved by surgical operation.

PREVIOUS MEDICATION

Fifty-five patients had been taking diphenylhydantoin sodium in varying amounts; most of them were taking 3 capsules, 0.3 Gm. (4.5 grains) to 5 capsules, 0.5 Gm. (7.5 grains) per day, the highest being 0.6 Gm. (9 grains) per day. Fifty of the 55 had been taking the diphenylhydantoin sodium in combination with phenobarbital; 8 of them had been receiving 0.03 to 0.06 Gm. (½ to 1 grain) of phenobarbital daily; 11, over 0.06 Gm. (1 grain) to 0.1 Gm. (1½ grains) daily; 23, over 0.1 Gm. (1½ grains) to 0.13 Gm. (2 grains) daily; 8, over 0.13 Gm. (2 grains).

Only 5 patients had taken diphenylhydantoin sodium alone. Ten had been unable to take this drug due to toxic effects. Two had never taken diphenylhydantoin sodium but had received phenobarbital alone. All the patients had taken phenobarbital alone or in conjunction with bromides or other barbiturates prior to diphenylhydantoin sodium therapy.

TABLE 1.—*The Age Range of Sixty-Seven Patients with Epilepsy*

Years	Number of Patients	
0 to 10	9	
11 to 20	13	44 patients (ages 11 to 40) 65% of total
21 to 30	20	
31 to 40	11	
41 to 50	6	
51 to 60	6	
61 to 70	2	

Approximately 50 per cent of the patients reported that diphenylhydantoin sodium had reduced the frequency and severity of their grand mal attacks. The other half did not report any significant results. Of all the patients (42 cases) taking up to 0.13 Gm. (2 grains) of phenobarbital with the diphenylhydantoin sodium daily, none reported sufficient drowsiness to cause any interference with daily activities, although the degree of drowsiness varied in individual cases. Many of them agreed that "slight drowsiness was more noticeable in the beginning when I started to take the little white pills, but I do not feel it now. I guess I am used to it." An appreciable tolerance to phenobarbital in almost all patients is apparently established early.

Depending on the severity and frequency of the attacks, 1 to 6 tablets of 3-methyl-5, 5-phenylethylhydantoin and 0.02 to 0.13 Gm. (⅓ to 2 grains) of phenobarbital were taken by each patient daily; the average dose being 4 tablets, 0.4 Gm. (6 grains) of 3-methyl-5,5phenylethylhydantoin and 0.088 Gm. (1⅓ grains) of phenobarbital daily. Kozol's[6] average dose in his initial studies was 0.6 Gm., or 6 tablets, of 3-methyl-5, 5-phenylethylhydantoin daily, but with longer experience he at present considers that the average adult dose is higher. The favorable action of phenobarbital is suggested when it is noted that, in this series, comparative therapeutic results are obtained with an average dose of 4 tablets (0.4 Gm.) of 3-methyl-5,5-phenylethylhydantoin and 0.088 Gm. (1⅓ grains) of phenobarbital daily.

TABLE 2.—*Duration of Epilepsy*

Years	Number of Patients	
0 to 5	19	54 patients 80% of total aged 15 years or less
6 to 10	20	
11 to 15	15	
16 to 20	5	
Over 20	8	

The average duration was approximately eleven years

TABLE 3.—*Duration of Treatment with 3-Methyl-5, 5-Phenylethylhydantoin*

Months	Number of Patients		
0 to 5	7	50% of total patients took the drug 2 years or less	
6 to 10	12		
11 to 15	9		
16 to 20	5		
21 to 25	4		50% of total patients took the drug over 2 years
26 to 30	8		
31 to 35	10	33% of total patients took the drug almost 3 years	
36 to 40	12		

CLINICAL RESULTS

This study is now in its fourth year, which is a reasonable length of time to fairly evaluate therapeutic results. The average expected incidence figure is derived from the number of grand mal attacks each patient experienced during the previous twelve months on the former therapy prior to beginning the new drug. It is to be assumed that this number of major seizures would continue if the new drug had not been given. Of course, it is important to note that many patients experience spontaneous remissions of varying periods, which always complicate any study of therapeutic results in epilepsy. In the majority of cases improvement followed almost immediately, so that the question of spontaneous remissions can hardly play an important role. In addition many of the patients who no longer had any seizures after a reasonable period of

TABLE 4.—*Classification of the Types of Seizures*

Types of Seizures	Number of Patients
Grand mal	45
Psychomotor	12
Petit mal	5
Focal convulsions	3
Myoclonic	1
Jacksonian	1

TABLE 5.—*Probable Etiology*

Types	Number of Patients
Undetermined	51
Trauma	6
Birth injury	4
Arteriosclerosis	3
Cortical degeneration	3

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[6] Kozol, H. L.: Epilepsy: Treatment with New Drug, 3-Methyl 5, 5-Phenyl-Ethyl-Hydantoin (Phenantoin), Am. J. Psychiat. **103**: 154 (Sept.) 1946.

time while taking 3-methyl-5, 5-phenylethylhydantoin had the dosage reduced, and in almost all cases a reappearance of grand mal seizures was again reported. Two of these patients had not had any seizures in three years.

The total average expected incidence of grand mal seizures in the 67 patients was 2,891. The actual number of grand mal attacks experienced by these same patients taking 3-methyl-5, 5-phenylethylhydantoin and phenobarbital was 1,140. This represents a reduction in the number of major seizures of approximately 60 per cent. In some cases petit mal and psychomotor seizures were also reduced, but these data were insufficient to be of any statistical value. However, Kozol[7] states that "this drug appears to be highly effective against psychomotor attacks."

In the single case of jacksonian epilepsy of traumatic origin this new anticonvulsant gave dramatic results. The patient, a man aged 45, had been having right lower extremity seizures for seven years. Three outstanding neurosurgeons after thorough and careful examinations agreed that operative measures would be of no avail. The man was taking 8 capsules of diphenylhydantoin sodium, 0.8 Gm. (12 grains) daily and 0.13 Gm. (2 grains) of phenobarbital in divided doses of 0.03 Gm. (½ grain) four times a day. He tolerated this dosage well, and the jacksonian seizures had been reduced from about ten to fifteen daily to about three to five daily. He had voluntarily attempted to increase the dosage of diphenylhydantoin sodium, but it made him nauseated so he continued on 8 capsules daily. Since the seizure of this patient was classified as severe, he was asked to take 0.8 Gm., or 12 grains (8 tablets), of 3-methyl-5, 5-phenylethylhydantoin and 0.17 Gm., or 2⅔ grains, of phenobarbital daily. The seizures ceased promptly. He has had three light jacksonian attacks in one and one-half years since the new regimen was first instituted. In the last three months he has reduced his dosage of the anticonvulsant to only 6 tablets daily without any increase in convulsive movements. This patient's total number of jacksonian seizures has not been included in the expected incidence figure.

Many cases of the predominant grand mal type have resulted in similar dramatic results. In 22 cases, or about one third of the total, the grand mal seizures ceased completely shortly after a regimen of 3-methyl-5, 5-phenylethylhydantoin and phenobarbital was instituted. All these patients, except 1, were in the younger group of 35 years of age or under. The duration of the epilepsy, which varied from one and a half years to twenty years, appeared to play no part in the results of this group. In 7 cases the seizures continued in the same ratio as before the new drug was prescribed. In 6 cases the number of grand mal seizures increased, in spite of adequate dosage and a reasonable trial period. The increase averaged about 10 per cent above the previous incidence. Administration of the drug was discontinued in the latter 6 patients, who were resistant to other types of therapy. In the remaining 32 cases the frequency of grand mal seizures was reduced from 10 per cent to 90 per cent. Of further importance was the fact that the severity of the seizures was definitely lessened. Moreover, most patients experienced fewer postconvulsive ill effects from mild spells than had ensued after the previous severe attacks.

SIDE EFFECTS

Studies of chronic toxicity in animals have shown the drug to be well tolerated (Spiegel[8]). In this study in 4 cases (6 per cent) there developed gingival hypertrophy; in 3 cases (4.5 per cent) skin rash and in 10 cases (15 per cent) slight drowsiness. Hypertrophy of the gums was minimal in all cases, and the drug was continued. In some cases previous gingival hypertrophy caused by diphenylhydantoin sodium actually receded and disappeared with 3-methyl-5, 5-phenylethylhydantoin therapy. This was especially true in the younger group.

In the 3 cases of skin rash, the rash was generalized and of a morbilliform type. In all cases the rash developed within two weeks. The color varied from pink to deep scarlet, was most pronounced on the extremities, especially the flexor surfaces, and was intensely pruritic. In one case, there was desquamation on the fourth day of the rash. Two of the 3 patients had experienced generalized rash previously, but the cause and description could not be obtained, except that the previous rash had also been pruritic. This suggests that the drug should be given with caution to patients who have had previous generalized rash. Phenobarbital and diphenylhydantoin sodium were ruled out as the possible offenders, since all 3 patients had been taking both drugs for long periods without developing any cutaneous rash. Undoubtedly the new anticonvulsant was the causative factor. The dose in each case was within the average normal of 0.3 to 0.4 Gm. (4.5 grains to 6 grains) daily. Kozol[6] has reported a rash incidence of 10 per cent. This occurred in those patients who were given large initial doses. Recently, however, Kozol[7] has reported that treatment has resulted in virtually no rashes, because he starts with small doses and increases the amount of the drug gradually. Evidently the initial amount of drug taken by dermal sensitive patients determines, in direct proportion, the appearance of the rash with all its clinical manifestations. Some patients require a higher dosage to bring latent sensitivity into activity. In all instances the dosage of the drug was promptly discontinued as soon as the patient reported the cutaneous eruption, and in all 3 patients the rash completely disappeared in approximately ten days. In 1 patient there developed, at the onset of the eruption, an elevation of temperature to 103 F., which was maintained for two days. The other 2 patients reported feeling warm. It is obvious that some elevation in temperature accompanies the rash. Blood counts done at the onset and again at the height of the eruption did not reveal any abnormalities except a moderate leukocytosis. Urinalyses were normal. When the rash had completely disappeared, treatment with the drug was reinstituted and the dosage was slowly increased to the previous therapeutic level. Two of the 3 patients were able to take it again without further toxic effects. The drug was again immediately discontinued in the third patient when pruritus was reëxperienced.

Ten patients (15 per cent) complained of drowsiness. In 7 of the 10 cases this side effect was mild.

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[7] Kozol, H. L.: Personal communication to the author, Oct. 15, 1946.

[8] Spiegel, E.: Unpublished data.

None of these patients was taking more than 4 tablets (0.4 Gm., 6 grains) of 3-methyl-5,5-phenylethylhydantoin and 0.088 Gm., or 1⅓ grains, of phenobarbital daily, and all had taken at least 0.06 Gm. (1 grain) of phenobarbital with the diphenylhydantoin sodium previously without complaining of drowsiness. Kozol[8] stated that "the principal drawback or side effect of 'mesantoin' is that it tends to produce drowsiness." This may be due to the fact that Kozol's[8] average dose of 3-methyl-5,5-phenylethylhydantoin for youths and adults was 0.6 Gm. daily (6 tablets), "with individual variations in the adult dosage ranging from 0.3 Gm. daily to over 1 Gm. daily"; while in this clinic, the average dose for adults is 0.4 Gm. daily (4 tablets), which may explain the low incidence of drowsiness. In all cases the drowsiness was most pronounced in the late morning or early afternoon hours. A few patients requiring larger doses in order to maintain a better anticonvulsant effect did complain of a deeper drowsiness. Some of these patients, in whom it was believed that this undesirable effect was due to phenobarbital, were given the 3-methyl-5,5-phenylethylhydantoin with less phenobarbital, but as the dose of the drug approached the daily level of 0.6 Gm., drowsiness increased. It can be deduced, therefore, that the new anticonvulsant has a soporific effect which is in direct proportion to the size of the dose. Children appear to be more sensitive to this effect than adults. After a period of about four weeks this effect lessens, possibly because of an increased tolerance.

None of the patients complained of any gastric disturbances, such as nausea or vomiting. Few patients complained of nervousness, which is a common manifestation of the epileptic state. This may be due to the fact that almost all the patients were also given small doses of phenobarbital. Ataxia and diplopia, which have been reported after treatment with diphenylhydantoin sodium, were not encountered in this series. Ten patients who were unable to take diphenylhydantoin sodium because of toxic symptoms took 3-methyl-5,5-phenylethylhydantoin and phenobarbital without any toxicity whatsoever, and the results in these patients were as good as in the entire series. The toxicity of the new drug is extremely low, as demonstrated by the excessive amounts (72 tablets) taken at one time in a nonfatal suicidal attempt (Kozol[8]). No effect was noted in the blood picture of most of the patients. In about 40 per cent of the cases the lymphocytes were moderately increased at the expense of the neutrophilic polymorphonuclear cells. This observation is being studied further. Routine urinalyses remained unchanged. Blood pressure readings remained the same as before the drug was instituted. No disturbance of the menses was encountered which might be attributed to this drug.

COMPLICATING ILLNESSES

It would be expected that other illnesses not related to epilepsy would occur in such a group. In 1 patient there developed infectious jaundice, but the jaundice and the other clinical symptoms of this disease cleared up in about three weeks while the patient was on full therapy of 0.4 Gm. (6 grains) of 3-methyl-5,5-phenylethylhydantoin and 0.088 Gm. (1⅓ grains) of phenobarbital daily. In another patient lobar pneumonia developed; 3-methyl-5;5-phenylethylhydantoin (0.3 Gm. daily) and phenobarbital was continued in addition to full doses of sulfadiazine. There were no toxic symptoms, and the pneumonia resolved on the sulfadiazine therapy. One patient suffered a severe skin burn and another fractured an arm in an accident. In both cases satisfactory and normal healing occurred while on full therapy. Four patients became pregnant, and throughout pregnancy full anticonvulsant dosage was continued. No untoward or toxic symptoms were experienced during pregnancy, and all 4 patients underwent normal labors and delivered normal infants.

ROLE OF PHENOBARBITAL

All physicians interested in the therapy of epilepsy are seeking to find a drug which can be given alone and which will be of benefit in a majority of cases. Up to the present this drug has not been found, and a doubt exists if one drug can satisfy all the varied demands of an epileptic attack, which is in reality a symptom complex. The fact remains that the majority of patients on any type of hydantoin therapy require other drugs, usually of the barbiturate group. Many clinicians prescribe barbiturates in addition to the hydantoin because clinical results are in favor of them. The following investigators, in comparative hydantoin studies, have reported better anticonvulsant results when the drug was given in combination with barbiturates: Doltolo and Bennett,[9] Harris and Ewalt,[10] Weaver, Harrell and Arnold,[11] Robinson and Osgood,[12] Cohen, Showstack and Myerson,[13] Merritt and Brenner[14] and Merritt.[15] Beckman[16] in his 1946 edition of "Treatment in General Practice" states: "As a matter of fact most men find that even in the treatment of adults, 'dilantin' (diphenylhydantoin sodium) is best employed in combination with phenobarbital."

Whether the barbiturate effect is synergistic or otherwise can best be determined from the clinical results. As shown by this and other studies, less hydantoin is required by those patients who also combine with it some barbiturate. Less of the drug would, of course, diminish the possibilities of any toxicity that might result from it in hydantoin-sensitive patients. The amount of barbiturate for this effect is usually small. The proper amount must be determined by careful observation in each case. The addition of a small amount of barbiturate usually decreases further the frequency of the grand mal seizures, lessens the severity of the convulsions, allays the anxiety symptoms of the patient and enables the patient to enjoy a more restful sleep. The latter two points greatly help in improving the patient's general well-being, which is just as important as the decrease in the number of seizures.

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[9] Doltolo, J. J., and Bennett, C. L.: Some Observations on Treatment of *Institutional Epileptics with Dilantin*, Psychiatric Quart. **14:** 595 (July) 1940.

[10] Harris, T. H., and Ewalt, J. R.: Complications Following the Use of Sodium Diphenylhydantoinate Therapy, J. Oklahoma M. A. **35:** 365 (Sept.) 1942.

[11] Weaver, O. M.; Harrell, D. L., and Arnold, G. B.: A Report on the Use of Sodium 5,5-Diphenyl Hydantoinate in Fourteen Selected Cases of Epilepsy at the Virginia State Colony for Epileptics and Feebleminded, Virginia M. Monthly **66:** 522 (Sept.) 1939.

[12] Robinson, L. J., and Osgood, R.: Comparative Effects of Phenobarbital and Diltantin Sodium in the Treatment of Epilepsy, J. A. M. A. **114:** 1334 (April 6) 1940.

[13] Cohen, B.; Showstack, N., and Myerson, A.: The Synergism of *Phenobarbital, Diltantin Sodium and* Other Drugs in the Treatment of Institutional Epilepsy, J. A. M. A. **114:** 480 (Feb. 10) 1940.

[14] Merritt, H. H., and Brenner, C.: Treatment of Patients with Epilepsy with Sodium Diphenyl Hydantoin and Phenobarbital, J. Nerv. & Ment. Dis. **96:** 245 (Sept.) 1942.

[15] Merritt, H. H.: Treatment of Epilepsy, Cincinnati J. Med. **27:** 279 (May) 1946.

[16] Beckman, H.: Treatment in General Practice, ed. 5, Philadelphia, W. B. Saunders Company, 1946, p. 802.

COMMENT

This study on the effect of 3-methyl-5,5-phenylethylhydantoin on convulsive seizures was begun in June 1943, and the first clinical report of its effect was published in June 1945.[1] Soon thereafter Clein[17] reported the drug to be more effective in epilepsy than any previous medicament and to be almost free of side effects. One year later, in 1946, Kozol[6] reported that "sixty per cent of the patients in the entire series (104 patients) were either greatly or moderately improved on 'mesantoin' therapy." This included grand mal, psychomotor and focal attacks.

This article represents an interim study of 3-methyl-5,5-phenylethylhydantoin, comprising three years of uninterrupted observation by the same clinician. The results of these studies, as well as those of Clein[17] and Kozol[6] demonstrate definitely that this drug is the most effective in reducing the frequency as well as in lessening the severity of epileptic convulsions. It is also the least toxic of all known hydantoins in use at present. This study has shown that a small amount of phenobarbital increases the anticonvulsant action of this drug. This view is also supported by many other clinicians in respect to diphenylhydantoin sodium.

The drug 3-methyl-5,5-phenylethylhydantoin can apparently be used safely during pregnancy without untoward effects. No other drugs, up to the present writing, have been found incompatible with it. Blood chemistry, renal function and blood pressure appear to be unaffected. The effect on the blood, as already discussed, is being studied further. The drug has been given during certain complicating illnesses with good anticonvulsant effect and no toxic symptoms. Further studies should be done in the jacksonian type seizures. Little influence is exerted on other types of epileptic seizures.

CONCLUSION

In a full three years of study with 3-methyl-5,5-phenylethylhydantoin in 67 cooperative patients, the major portion suffering from epilepsy of undetermined cause and a small number from epilepsy of organic origin, grand mal seizures were reduced approximately 60 per cent and improved emotional status was noted consistently. Other types of epileptic seizures, such as petit mal and psychomotor, were not improved with this medicament. Phenobarbital in small doses increased the anticonvulsant action of this drug and in addition controlled the anxiety and other disturbing symptoms from which many epileptic patients suffer. Less drug was required when combined with small amounts of phenobarbital. The toxicity of 3-methyl-5,5-phenylethylhydantoin is extremely low; only 1 patient was unable to take the drug because of a rash. Other toxic symptoms of hydantoins, such as ataxia, nausea, vomiting, dizziness and diplopia, were not encountered in this series.

This interim study as well as the studies of Clein[17] and Kozol[6] support the preliminary observations of 1945[1] that 3-methyl-5,5-phenylethylhydantoin is superior to other hydantoins in present use in the treatment of grand mal seizures.

124 East Fortieth Street.

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[17] Clein, N. W.: New Anticonvulsant in the Treatment of Epilepsy, 3-Methyl 5,5-Phenylaethylhydantoin (Hydantal): Preliminary Report, Northwest Med. 44:210 (July) 1945.

Special Article

MEDICAL CONDITIONS IN ALASKA

A Report by a Group Sent by the American Medical Association

HARRY E. BARNETT, M.D.
JACK FIELDS, M.D.
GEORGE MILLES, M.D.
JOSEPH SILVERSTEIN, M.D.
and
ARTHUR BERNSTEIN, M.D.
Chicago

The advisory committee of the American Medical Association to the Department of the Interior appointed a team to study the over-all medical conditions and problems of the territory of Alaska and to render such special advice and aid as could be given.

Alaska was toured for a period of three weeks. The team arrived in Anchorage July 19 and completed its tour on August 9. The following sites were visited: Anchorage, Seward, Bethel, a native village on the Kuskokwim River, Unalakleet, Nome, Gambell on St. Lawrence Island, Kotzebue, Point Barrow, Tanana, Fairbanks, Juneau, Hoonah, Sitka, Ketchikan and Metlakatla. A total of about 4,500 miles was traveled in Alaska.

The team was capably guided by Dr. C. Earl Albrecht and Dr. Leo Gerhig of the Territorial Department of Health and Dr. Howard Rufus of the Alaska Native Service. Physicians of the Alaska Native Service, as well as private practitioners, were consulted as to their problems. Nurses in the field, at Alaska Native Service hospitals and at private hospitals were interviewed. Local officials such as village mayors and councilmen as well as territorial officials were interviewed. A conference was held with Gov. Ernest Gruening.

School facilities were examined and school teachers were interviewed, as they are an important cog in the health of the small isolated communities in Alaska. Statistics on venereal disease were examined, and the military, health officers and private physicians were interviewed. Patients were examined and treatment or suggestions for management were offered. The team performed several operations and examined several hundred patients. The number of places visited and the distances covered gave the team an excellent insight into the situation regarding the over-all medical picture in Alaska.

Alaska is 586,000 square miles in area, or one fifth the size of the United States. It is twice as large as Texas. Distances are greater than many anticipate; the distance from Ketchikan in southeastern Alaska to Attu, westernmost of the Aleutian Islands, is greater than that from New York to San Francisco. From Ketchikan to Point Barrow the distance approximates that from Seattle to the Mexican border. The size of Alaska is readily appreciated by noting the extent of a map of the territory superimposed on a like-scale map of the United States.

The greater part of the northwestern portion of the territory (north of the Alaska Range) has "permafrost," or permanent frost; this is a condition of permanently frozen soil from within a few inches of the surface down to bed rock, several feet to many hundred feet into the earth. This condition hampers the laying of pipes for water supply and sewage disposal, which is such an important feature for proper sanitation and hygiene. The climatic condition of the territory is characterized by low temperatures in the interior (minus 70 F.) and an extremely short growing season in the summer. The territory has not been widely developed from an agricultural standpoint, and food as well as dairy products are imported with resultant high costs of these products.

The present population of Alaska is estimated to be between 90,000 and 100,000; of these 32,000 are natives. The native population has remained unchanged since the purchase of Alaska in 1867. The natives consist of about 15,000 Indians and 15,000 Eskimos and 1,200 Aleuts. The nonnative population has increased since the onset of the war and has continued to increase with the opening of the Alcan Highway and the influx of workers hired by contractors for War and Navy Department activities progressing at this date. The population of Anchorage has grown from 3,400 to 10,000 during the war years, and this trend has continued; hence, an accurate estimate of the population cannot be made. All other cities in Alaska have increased in population, though to a lesser extent; Juneau, Fairbanks, Sitka and other cities have increased about 50 per cent over their prewar census.

Defense of the continental United States, in fact of the whole North American continent, has become a very pertinent factor with regard to Alaska, which has been called the "left flank of the North American Continent." Its strategic position is being emphasized by the recent world unrest. A healthy populace as well as a stable increase of the population of the territory would aid in the defense of Alaska. The territory is also being used for arctic training of the troops, a site which cannot be equaled under the American flag. Again, a healthy populace would reflect on the health of members of the armed forces, as they would then not be exposed to communicable diseases.

TUBERCULOSIS

Tuberculosis constitutes the most urgent and important health problem in Alaska. The statistical data are unassailable, and these with our personal inspection served to impress the committee with the urgency of the problem. In discussions with many private practitioners, physicians of the Alaska Native Service and the territorial health commissioner the problem was emphasized.

Pulmonary tuberculosis was seen at every activity visited. A half day was devoted to the examination of patients in the outpatient clinic at Bethel. Six new cases of open tuberculosis were observed, but the patients had to be sent home because of the lack of facilities for their care. Dr. Langraam, Alaska Native Service physician at Bethel, stated that regardless of the presenting disease 50 per cent of cases were complicated by tuberculosis.

Extrapulmonary tuberculosis was seen to occur in an unusual proportion of the population. These infections consisted of bone and glandular involvement. Cases of tuberculosis of the spine in both the active and inactive stages were a common sight after a short stay in the territory. Many of the extrapulmonary lesions were accompanied by pulmonary involvement, and this complicated the problem of treatment. The majority of the crippled children in the territory had tuberculosis of the bone, as revealed by a recent survey.

The death rate from tuberculosis of 359.1 per hundred thousand for the year 1945-1946 is probably among the highest in the world. The rate for the United States was about 40.1 per hundred thousand. The Alaskan rate is nine times the rate in the states. The native rate is much higher than the over-all rate indicates—perhaps fourteen times the over-all rate in the United States, while the rate for the white population is twice as high as in the states. In the states the over-all death rate from tuberculosis includes the high incidence among the Negro and Mexican segments of the population. It is also common practice among the white population in Alaska to go "outside" for treatment of tuberculosis when the diagnosis is established. (The term "outside" refers to the United States.) The rate, therefore, is not padded by any unusual circumstances but reflects probably a lower trend than is actually true.

The total number of cases of open pulmonary tuberculosis in Alaska approximates 4,500. This figure is arrived at by the usual practice of multiplying the number of deaths from tuberculosis by nine to arrive at a conservative figure of open cases. Incidence in some villages has been established as 25 per cent of the population of the village by recent mass survey statistics.

About 60 per cent of the cases of tuberculosis reported to the health department in 1945 were first reported on the death certificate. This means that in Alaska during 1945 over half of the cases discovered were unrecognized until death. This figure dramatically points to the need of additional efforts at control.

When deaths from tuberculosis are compared to deaths from all causes, including injury, organic disease and suicide, it is found that tuberculosis causes one of every five deaths, or in other words accounts for 20 per cent of the mortality in the territory. The analysis of deaths due to communicable disease in Alaska for 1945 reveals that 69 per cent of all such deaths were due to tuberculosis.

Dr. Rabeau at the Alaska Native Service Hospital in Kotzebue had compiled some decidedly interesting statistics from his records. Kotzebue is a village of 1,200 persons, all Eskimos. For a period of four and one-half years the death rate in this community was 3,600 per hundred thousand. Of these deaths 54.7 per cent were directly the result of tuberculosis, the diagnosis having been proved by autopsy in over half the cases. Dr. Rabeau reported that in a period of seventeen months he cared for 40 patients with tuberculous meningitis. It was his opinion that 25 per cent of all the natives in the community which he served had open tuberculosis, a figure that has been substantiated in several communities by the mass roentgenologic survey now in progress. He further estimated that an additional 35 per cent of the natives had what he would be willing to classify as arrested tuberculosis.

The school teacher at Barrow stated that of 30 children between the ages of 5 and 6 who had entered school but 6 lived to finish. The majority of deaths were due to tuberculosis.

The *M/S Hygiene,* the Territorial Health Boat, reported on a visit in 1945 to Perryville, a village of 70 persons, that there were 7 patients who had far advanced tuberculosis with positive sputums. As a result of this high incidence of active tuberculosis the infant mortality was extremely high. More than one half of the children born in this village died before they were 6 years of age.

The high rate of tuberculosis among the natives can be ascribed to many factors. The natives may have a lower resistance than those of the white race. However, contact is probably the most important factor. In the native villages housing, in the vast majority of instances, is very poor. As many as eleven persons were found living in a single room about 9 by 12 feet, with little ventilation. It is evident that the presence of an open case of tuberculosis would expose all members of the group to large and frequent doses of tubercle bacilli. Furthermore, the native is rather stoical and only infrequently presents himself for medical care in the absence of urgent symptoms, among which he has come to recognize that spitting of blood is especially ominous.

The committee was surprised to learn that up to the spring of 1945 no sanatorium for the treatment of tuberculosis existed in Alaska. Patients, when the case had been diagnosed as tuberculosis, were either sent back home to be cared for by their family or kept in an Alaska Native Service hospital. The latter amounted to custodial care only. The facilities in Alaska up to 1945 totaled a maximum of seventy beds in Alaska Native Service hospitals, and these were for native beneficiaries only. White or nonnative beneficiaries are not cared for by these facilities except in emergencies.

Since 1945 two separate facilities have become available for the treatment of tuberculosis; the sanatorium on Alice Island, Sitka, and the Seward Sanatorium, a total of two hundred and fifty beds. Both of these are reconverted army hospitals of temporary construction. The first is an Alaska Native Service facility, while the latter is a territorial facility leased to the Methodist Mission for management.

The Seward Sanatorium depends on territorial funds, Veteran Administration funds while veterans are hospitalized and Alaska Native Service funds for hospitalized native beneficiaries. The Seward Sanatorium must maintain a hundred and twenty-five bed capacity to be financially sound. While we were in Alaska the Alaska Native Service was forced to withdraw its financial support from the Seward Sanatorium because a deficiency appropriation to cover the native patients in the Seward Sanatorium did not pass in Congress. This last fact struck the committee as a thunderbolt, as it now appears that the Seward Sanatorium has been virtually scuttled.

The existing sanatorium facilities are hopelessly inadequate to stem the tide of tuberculosis. The problem at present is selection of the few patients for admission from the many whose cases have been uncovered, since the number of beds is so limited. Many cases are far advanced and hopeless as to prognosis. The occupancy of a bed by a patient whose case is hopeless seems unfair when perhaps 10 or 12 less seriously ill patients whose disease is more amenable to treatment are awaiting admission. Of course, the hospitalized patient in the hopeless case is at least removed from his family and the public and so does not serve as a disseminator of the disease.

In each Alaska Native Service hospital a few beds are provided for the care of tuberculosis. These are general hospitals, and where a physician is in residence, as at Kotzebue, Bethel and Juneau, tuberculosis patients were in good proportion to the total number of beds. In hospitals that did not have a resident physician the bed capacity was not utilized and tuberculosis patients were not in adequate proportion to the occupied beds. The latter was true in such places as Barrow and Tanana. In the general hospitals of the Alaska Native Service treatment of tuberculosis amounts to custodial care for the most part, and only at Bethel and Juneau were pneumothoraces performed.

The case finding program of the Territorial Department of Health is progressing very satisfactorily. Three separate equipments are being utilized. First, the *M/S Hygiene,* the Territorial Health Boat, travels Alaska's shoreline calling at isolated villages from Ketchikan and Metlakatla to Nome. This work is continuing and will be a year round project of the Department of Health. Second, a 4 by 5 General Electric 200 milliampere photofluorographic unit is being transported from one large city to another in the territory. This unit was operating in Anchorage when the committee first arrived in Alaska. This unit will continue its circuit throughout the larger cities of the territory, including Palmer, Fairbanks, Nome, Unalakleet and possibly Bethel, Seward, Kodiak, Juneau and Sitka. When this itinerary is completed the residents of all cities of a population greater than 1,500 to 2,000 will have been examined. Third, the Mobile Health Unit, an army small arms repair truck, is equipped with clinic facilities, health education materials and a 30 milliampere portable Picker X-Ray machine. This mobile unit serves the highway system of the territory.

The last method of roentgen examination of territorial residents is through the private physicians and hospitals. The Territorial Department of Health pays $2.50 and furnishes the film for any roentgenogram taken on persons suspected of having tuberculosis. This program resulted in approximately 3,000 roentgenograms during the past year, all of which were interpreted at the Juneau office.

Further plans for case finding include the use of a 30 milliampere portable Picker Field Unit, which can be transported by plane in smaller communities. These communities cannot be reached by road, rail or boat. It is in these smaller villages that the incidence of tuberculosis is high.

The after-care and rehabilitation of tuberculosis patients is almost a nonexistent project in Alaska. Territorial funds were appropriated during the special session of the Territorial Legislature in 1945 for such a program to be operated under the Social Security Agency. A subsequent appropriation for this program at the 1946 legislative session was totally inadequate to carry out the intent of this program. At present the only effort at rehabilitation possible will be made with the aid of the limited funds available from the Alaska Tuberculosis Association. These will consist in a wholly inadequate program of occupational therapy and organized amusement of patients in the sanatoriums.

A central case registry for tuberculosis has been started in the Juneau office of the Territorial Department of Health. It has been indicated that the registry will be divided, in that all cases from the interior of Alaska will be filed in Anchorage. This will facilitate the management of the control problem in the interior.

The committee saw a number of patients with open cases housed in 9 by 12 foot rooms among eight to twelve persons, all members of one family. Can isolation be practiced in such homes? Is it a wonder that the life expectancy of the natives is so short? The Barrow school teacher's statement tells the story; he said: "Of a class of 30 that entered school, 6 have lived to graduate." Is it a wonder that the total native population of Alaska has not increased from what it was when the territory was purchased in 1867?

Tuberculosis is a preventable disease. The white plague can be controlled in Alaska and in a period of five to eight years the death rate and incidence need not be greater than in the best areas in the United States.

For those who decry federal aid the committee wishes to point out that the problem in Alaska has existed for many, many years without even an effort toward a solution until 1945. The territorial funds are insufficient to meet the present needs of Alaska in tuberculosis control. Alaska has been a neglected possession of the United States up to recent years. The war years and its present eminence as the "left flank of the North American Continent" have brought Alaska into the national conscience. The citizens of Alaska, its officials and the health authorities are cognizant of the acute problems. Defense of Alaska would best be accomplished with a healthy populace.

In the face of the serious tuberculosis problem in Alaska, Congress has seen fit to reduce the already meager funds of the Alaska Native Service for the care of the tuberculous. It must be emphasized to those who may be color or race conscious that the tubercle bacillus knows no color line. To those who measure in terms of tax dollars it must be evident that in a course of years inadequate attempts at control of tuberculosis is wasteful. To the industrialist and employer who think in terms of production, it must be pointed out that a labor market grossly infected with tuberculosis is an economic liability. To the military who are prone to think in terms of effective fire power the ever present danger of tuberculosis is both a direct impediment to the efficiency of their forces and a demoralizing factor. Finally, to the parents, relatives and friends of those going to Alaska, both as civilians and in armed forces, the rate of tuberculosis in the territory constitutes an ever present danger.

EYE HEALTH SURVEY

The Eye Survey was carried on at all localities visited. About 50 to 60 natives were examined in each village. The total number examined was well over 600. The persons were taken at random, and the majority were children. The greater part of the study was among the Eskimos.

Early in the course of the tour it became evident that corneal opacities among the Eskimo natives were extremely prevalent. These lesions were a result of acute processes in the early years of their life, and later the resultant scars caused poor vision. The universal distribution of corneal lesions among the villages of arctic Alaska was striking.

The ocular pathologic processes noted in order of frequency were phlyctenular keratitis (inactive), phlyctenular pannus (active), phlyctenular keratitis (active), phlyctenular conjunctivitis (active), chronic conjunctivitis (cause undetermined), angular conjunctivitis (cause undetermined), squamous blepharitis and phthisis bulbi. Many cases of convergent strabismus were seen. In the older age group senile cataracts in the various stages of progression were noted, some of them in need of extraction.

The observations revealed that from 22 to 50 per cent of the children examined in any village exhibited corneal opacities. Some villages had a higher incidence than others. These opacities varied from pinhead-sized infiltrates, nebulous in character and not interfering with vision, to large dense leukomatous opacities causing a decided reduction in vision. All parts of the cornea seemed to be involved. The consequences of these corneal lesions are reflected in the following observation: of the 600 persons examined, 40 had corrected visual acuity of 20/100 or less. This figure is referred to as "industrial blindness."

Coincident with this committee's tour, an ophthalmologist employed by the Territorial Department of Health under the auspices of the Vision Conservation Program was just completing a six weeks' study. In comparing the statistics of the various ocular diseases it was found that the observations were similar. Independently the opinions agreed as to the probable causes and management of these conditions.

It is considered that there is no association between the corneal lesions and trauma, malnutrition, tuberculosis, exposure or actinic rays. The causes of the corneal opacities were not determined in this survey. The opportunities for etiologic studies could not be used to advantage in a short visit. The contributing factors of these corneal involvements can be listed as follows: (1) poor personal hygiene, which permits the growth of the staphylococcus or other organisms; (2) totally inadequate medical facilities for diagnosis and treatment in children between birth and 5 years of age, when these corneal lesions occur, and (3) the lack of knowledge on the part of the physicians, nurses, school teachers and parents as to the connection between the "sore eyes" of infancy and the corneal opacities of later childhood and adult life. An interesting observation was made at Gambell, St. Lawrence Island. Here 50 children were examined and only 2 instances of corneal opacities were noted. It proved that these 2 children had been adopted from Nome and had come to Gambell recently. It is in Gambell that the school includes showers every Friday as part of the school curriculum.

Alaska does not have a qualified ophthalmologist. Numerous cases require surgery. Many patients with corneal opacities would be benefited by corneal transplants. Refractions for the presbyopic persons to aid them in carrying on their occupations are not available in small communities.

The ophthalmologist of this team performed the following surgical procedures: strabismus cases, 2; enucleation, 1, and cataract extraction, 1.

VENEREAL DISEASE

Venereal disease is one of the serious medical problems of the Territory of Alaska. The problem is especially serious in the larger cities, where recent increments of population have occurred due to defense work. The areas are usually in close proximity to military posts, and the incidence of venereal disease among the military personnel is unusually high. This latter is true in such places as Fairbanks and Anchorage.

The biennial report of the Office of the Commissioner of Health for the period July 1, 1944 to June 30, 1946 revealed a decrease in the incidence of syphilis but an increase in the incidence of gonorrhea during the fiscal year 1945-1946 as contrasted with the year 1944-1945. This report included venereal diseases occurring in military personnel. Since many troops left the territory during the latter part of the reported period, it is evident that the increase of gonorrhea is definitely significant.

Many factors contribute to the present incidence of venereal disease. Among these may be included alcoholism, the "line," the preponderance of male over female inhabitants and the rapid expansion of population due to defense activities.

Alcoholism plays an important role in spreading venereal disease. General Everest, the commanding officer of Ladd Field, informed this group that most of the soldiers infected stated that they had been intoxicated at the time of exposure.

In Fairbanks the community condones open prostitution. "The line" extends along Fourth Street, in the very heart of town. Twenty-three inmates of this street openly solicit and are unmolested. Control of venereal disease cannot be accomplished under these circumstances. Community indifference and outmoded ideas of "family protection" are the most important reasons for the existence of the professional prostitutes. Financial gains to the property owners may be another reason.

The Territorial Department of Health has been making a concerted effort to combat venereal disease. It has distributed literature to the physicians explaining in detail the accepted modern modes of treatment of venereal disease, and it has furnished without charge *diagnostic and therapeutic measures for control* of venereal diseases.

Several physicians in private practice who were interviewed said that they were prevented from completing a course of antivenereal treatment in indigent patients because of lack of medicaments. The commissioner of health, Dr. C. Earl Albrecht, explained that there were no funds available for further purchases of drugs.

The Territorial Department of Health received $24,200 of venereal disease funds for the fiscal year of 1948. A considerable amount of this must be applied to the support of four laboratories: Ketchikan, Juneau, Anchorage and the *M/S Hygiene*. A relatively small amount goes toward administrative and nursing budgets and the remainder to direct venereal disease control measures. It is wholly inadequate to curb the spread of gonorrhea and syphilis. Fortunately, however, a grant of $7,000 from the U. S. Public Health Service for the rapid treatment of syphilis was received recently. This will help, but additional funds or their equivalent in personnel or drugs for other venereal control measures is needed.

The reason Alaska gets only $24,200 is the injustice of the allotment system. Ninety thousand persons are spread out and are overburdened with literally tens of thousands of troops and construction workers for rehabilitation, defense and civilian construction. Alaska has the need for intensive venereal disease control assistance by the U. S. Public Health Service. The tragedy is the spread of venereal disease to isolated native groups who were clean in the past and now have been infected and have taken it back to their homes and communities. It is simply getting out of control.

At present the venereal disease program is administered by the territorial commissioner of health under the Division of Communicable and Preventable Disease Control. This is a weak link in the chain of control. The commissioner of health has so many duties, the most important being administration and organization of his department, that the Division of Communicable and Preventable Disease Control suffers as a result. A separate person should be in charge of the Division of Communicable and Preventable Disease Control. The function of this division is an exceedingly important one, not only as regards venereal disease control. The U. S. Public Health Service should supply the director as well as sufficient financial aid to assist Alaska in its fight against venereal and other communicable diseases. The problems exist because of recent increases in the population, mostly transients, and as a result of defense activities in the territory. The problem of venereal diseases among the military makes it one for federal subsidy.

COMMUNICABLE DISEASES

Communicable diseases, other than tuberculosis, are an ever present threat in Alaska. The danger is aggravated by the recent increase in population due to defense work, Alaskan Railroad rehabilitation program, dependents of the armed forces and transients. The general substandard sanitation and housing facilities that exist throughout the territory make the problem an urgent and potentially dangerous one. It is surprising that serious outbreaks of diseases have not occurred.

The committee was informed of a current outbreak of typhoid in two separate areas of the territory during our visit, July 1947. Four proved cases occurred in the village of Nenana and 3 cases at Anchorage. Nenana has no hospital facilities, while at Anchorage the hospital facilities are inadequate for the community and there are no isolation beds.

The committee was impressed with the fact that none of the existing hospital facilities provide beds for the isolation of communicable diseases. During an epidemic of diphtheria in Anchorage in August 1946, 35 patients were isolated in a quonset hut.

Alaska has many ports through which diseases may be carried into the territory. The rat population of many of these ports is in such proportion as to make plague a real threat.

All the exanthems as well as influenza and enteric diseases have been reported in the territory each year. Measles, diphtheria and influenza have occurred in epidemic proportions. Tularemia and trichinosis have occurred, though not in serious numbers. An epizootic of rabies has occurred along the Yukon and Kuskokwim River areas, and its greatest severity was manifest along the upper region of this drainage. No human cases of rabies were reported, but several persons were given the Pasteur treatment as a precautionary measure when they reported that they had been attacked by animals displaying symptoms of "madness."

International travel through Alaska is expanding rapidly. Regulations, appropriations and personnel should be provided for this.

SANITATION

Sanitation and engineering is a division of the Territorial Department of Health. The sanitation and engineering program is comprised of education, inspection, consultation and enforcement services to the public and to persons on the subject of sanitation in the following fields:

1. Water supply
2. Sewage disposal
3. Food handling
4. Milk supply
5. Salmon, clam, crab and shrimp processing
6. Practice of cosmetology and barbering
7. Operation of hotels and rooming houses
8. Garbage collection and disposal
9. Housing
10. Swimming pool and bathing beach construction and operation
11. Interstate carrier watering points
12. Bottled waters and beverages
13. Water pollution
14. Plumbing
15. Heating, lighting and ventilation of dormitories, schools and public buildings
16. Rodent control
17. Industrial hygiene
18. Property and public health nuisances; requests for advice from private individuals, and requests for advice from local health officials.

The application of principles of basic sanitation was among the first organized public health endeavor in Alaska and started about eleven years ago. In spite of progress, much still remains to be done if the environmental sanitation of Alaskan communities is to meet reasonable standards.

Personnel problems in the Division of Sanitation and Engineering have been very trying in the past few years. Unsettled war and postwar conditions, combined with the high cost of living in Alaska and housing problems, were doubtlessly the cause for a great turnover. During the greater part of the biennium of July 1, 1944 to June 30, 1946 there were two or three professional employees and two clerical employees. This situation has not improved since these dates. Seven different professional employees and seven different clerical employees were on duty with the division during the biennium July 1, 1944 to June 30, 1946. The services of four of the seven professional employees who were on duty with the division were loaned to the Department of Health by the U. S. Public Health Service during the above reported biennium. The division staff has been limited to two or three professional employees during practically all of its existence, and few of the personnel have remained over a year or two.

The facts regarding personnel emphasize the inadequacy of the solution of the sanitation problems, especially in view of the extensive list of duties of the Division of Sanitation and Engineering, as previously mentioned.

The difficulties that confront work in sanitation and engineering in Alaska are those of geography and climate. The great distances between inhabited points and the difficulty in reaching these places become self evident when the map is consulted. Climate, especially in the arctic, is an ever present hazard and problem. Permafrost exists in the entire arctic region; in winter the earth is solidly frozen up to the surface with concomitant external temperatures of minus 70 F. One can easily visualize the difficulties in laying water and sewer pipes.

The committee saw at first hand the problem that exists in Nome. Water is piped into the homes and business places during the summer, for a period of three months. At all other times it is purchased in gallon quantities from carts and water wagons. The sewage condition is much worse. No flush toilets exist in Nome except on the street facing the ocean beach. The toilet facilities consist of simply a bucket, and a crew of pick-up men making the rounds at intervals. The latter is referred to as "the honey wagon." The situation would be humorous, with the stories of frozen buckets in winter, if it were not so serious. The city of Nome, either because of finances or inertia of its citizens, has not been able to solve its sanitation problem.

Public sewerage and sewage disposal methods were inspected in most of the principal towns and in many small villages and outlying areas. These inspections disclosed the continued improper discharge of community sewage on tidal flats, in small streams and on beaches in most of the coastal towns.

In the biennial report for the period July 1, 1944 to June 30, 1946 a careful study of known conditions of three significant features of sanitation—public water supply, public sewage and garbage disposal—are reviewed. Existing conditions were compared, community by community, on a percentage-of-adequacy basis, with recognized standards of good United States practice. While it was evident that much improvement in basic sanitation is needed, many communities, such as the villages of arctic Alaska, cannot economically provide all the protection and conveniences of year around, citywide water and sewer systems.

Average Per Cent Adequacy of Sanitation Facilities

Judicial Division	Water Supply, %	Sewerage, %	Garbage Disposal, %
I Southeastern	59.0	38.0	29.0
II Arctic and Bering Coastal	2.5	0.5	3.0
III Southern Pacific Coastal	22.0	18.0	17.0
IV Interior	7.5	11.0	10.0
Entire territory	30.0	20.0	17.0

The data in the accompanying table show clearly the great need for major improvements in public water supply and sewerage systems.

The committee was impressed with the vast duties of the Division of Sanitation and Engineering, and discussions with the health authorities emphasized this. As an example it may be cited that there are four hundred canneries in Alaska. It is difficult to conceive that all of these are properly inspected during the short season in which they operate.

PERSONNEL

The problem of attracting well trained persons into the territory to fill the needs of all specialized fields is an extremely important one at this time. The Territorial Department of Health and other agencies dealing with health, such as the Alaska Native Service, have difficulty in filling positions. The efficiency of government throughout the territory is being seriously impaired by the lack of personnel. The annual turnover among federal agencies in the Anchorage area varies from a low of 35 per cent in the Civil Aeronautics Administration to 120 per cent in the War Assets Administration. The average term of employment in the Territorial Department of Health is nine months. The weather bureau, the Alaska Railroad, the school system and most other agencies face the same problem.

Personnel problems in the Division of Sanitation and Engineering have been very trying in the past few years, as has previously been stated. The Territorial Department of Health, as well as the Alaska Native Service, has unfilled positions for physicians. The resultant lack of medical care reflects on the over-all health condition of the territory. The reasons for the personnel problems can be attributed to the following factors: high cost of living in the territory; isolation of the individual in remote communities away from professional contacts, and, finally, the housing shortage.

The high cost of living is attributed to the fact that most of the food and all other commodities are imported from the states. Freight and shipping rates added to the cost of a moderately priced item of food, clothing, utensil or furniture results in a sizable increase over the price in the states.

The wage differential for employees of the territory is not remarkable. Salaries for employees of the Territorial Department of Health are similar to those in the states for comparable positions. Salaries of employees of the U. S. Public Health Service assigned for duty with the Department of Health have a 10 per cent differential for "overseas" pay. Civil service employees of the Department of the Interior, of which the Alaska Native Service is a division, have a 25 per cent differential in salary for service in Alaska.

Unskilled workers as well as those skilled in trades in Alaska receive unusually high salaries on the open labor market. The territory is at a decided disadvantage in competing with this market. The committee was informed that two employees of the Division of Sanitation and Engineering had resigned recently to accept positions as policemen in Fairbanks.

Isolation, especially of a physician, in remote villages in Alaska for an indefinite period is a deterrent in attracting capable men. Professional contacts do not exist. Facilities for postgraduate training have not been provided. In order to obtain postgraduate training a physician would have to return to the states and extend his leave of absence at his own expense.

Housing shortages without any doubt are the chief deterrent to the encouragement of permanent residence in the territory at the present time. Families have come to the territory with a good job and adequate finances but after weeks or months in a hotel room have given up in despair and returned to the states. Efforts of such governmental agencies as the Alaska Railroad, War Department and Civil Aeronautics Authority to provide housing for their employees are commendable. However, the health agencies have not been as active in providing abodes for their employees. Alaska Native Service hospital facilities at Tanana and Kotzebue are without housing for a physician and his family.

HOSPITALS

The following hospitals were inspected by the Committee:

Anchorage

The Provident Hospital is a modern fifty-five bed fire-resistant building with extremely modern equipment. It is well staffed and well furnished. It is by far the best hospital physical plant visited. It is run by a Catholic order of Sisters.

Seward

The Seward General Hospital is a small one and one-half story wooden structure, a single room being used on the second floor. It is old and appears to be in a rather poor state of repair and is overcrowded. It is distinctly a fire hazard. The Methodist Board operates this hospital.

The Seward Sanitarium is an army hospital taken over by the Territorial Health Department and leased to the Methodist Board. It is a temporary army hospital of unit type, one story, wood construction and with adequate fire breaks and fire protection. It appears to be well equipped and in a good state of repair. This type of construction is expensive to maintain.

Bethel

This Alaskan Native Service hospital is a two story, thirty-six bed wooden structure in excellent physical repair. There is considerable overcrowding as indicated by the fact that a few pediatric patients were in wheelchairs. The equipment is good.

Nome

The Maynard Columbus Hospital, operated by the Methodist Board, is a two story wooden structure. The building is old, in a poor state of repair, and has a decided list due to the settling of the foundation. The main stairway to the second floor is narrow. The building is a fire trap. It should be replaced before a serious catastrophe occurs.

Kotzebue

This Alaska Native Service hospital is an old, two story, thirty-one bed wooden structure in a good state of repair. It was overcrowded.

Barrow

This Alaska Native Service hospital is a two story, eighteen bed wooden structure, comparatively new, well equipped and designed.

Tanana

This Alaska Native Service hospital is a two story, thirty-three bed wooden structure, comparatively new, well equipped and designed. No facilities for living quarters for a physician are provided.

Fairbanks

The St. Joseph Hospital is a three story, asbestos-shingled, wooden-framed building, comparatively modern and relatively well equipped. It is conducted by a Catholic order of Sisters. It appears to be rather crowded.

Juneau

The Alaska Native Service operates a two story frame hospital. It is a general hospital with a few beds for tuberculosis. Because of lack of funds it is being reduced to fifteen beds.

The general hospital is frame and concrete. It appears to be in a good state of repair. It was not given a detailed inspection.

Sitka

There is no public hospital in Sitka. The local population depends on the beds in the Pioneers' Home. This facility is made available with some reluctance on the part of the authorities, and while this building is of excellent and fireproof construction and the hospital section is well equipped, it does not appear to meet the needs of a community of this size. Obstetric cases are delivered in the Salvation Army Home.

Alice Island—Sitka

The tuberculosis sanatorium is a temporary army hospital of single story units, wooden construction, and adequately protected from the hazard of fire. It appears to be rather well equipped.

The Orthopaedic Hospital and Mt. Edgecombe Infirmary: These two units are housed in a permanent, semifireproof, two story building constructed by the Navy. The physical plant and equipment are superior.

Ketchikan

The general hospital is operated by a Catholic order of Sisters. It is a three story frame and concrete building in a good state of repair. It is something of a fire hazard.

The general hospitals of the territory are grossly inadequate to meet the medical needs of Alaska. In all but one of the sites visited (i. e., Ketchikan) the hospitals were inadequate from the point of view of bed-capacity and in most places the physical plant was also inadequate. The insufficient hospital facilities can be attributed to the rapid growth of the population in the larger cities of Alaska as well as the fact that civilian hospital construction has lagged during the past several years. The causes for the latter are the same as for the shortage of housing in general, namely, scarcity of materials and high building costs.

Most of the hospitals surveyed were wooden, and the committee was impressed with the fire hazard that these buildings presented. Indeed, it was reported that two hospitals had burned in the past year. These hospitals were at Palmer and Valdez, and the communities are now without any hospital facilities. The hospital at Nome (Maynard Columbus) gave the impression of "a tragedy waiting to happen."

The general cost of hospital construction in Alaska is appreciably greater than in the states and is probably more than 50 per cent higher per bed. The per bed cost of construction decreases up to a certain point with hospitals of increasing bed capacity. A fifty bed hospital is more expensive to construct per bed than a two hundred bed institution. This is because certain of the utilities, such as heating plant and laundry, are inherently the same for a small as for a large hospital.

The Hospital Survey and Construction Act has provided funds to states or territories in which a comprehensive study has resulted in the formulation of an acceptable and coordinated hospital plan. Alaska has complied with this requirement. The Hospital Survey and Planning Unit of the Territorial Department of Health is under the administrative direction of the Board of Health.

The allotment to Alaska from the federal government's $3,000,000 fund for survey and planning is $10,000. This is to be matched by territorial funds in the ratio of $2 of territorial funds for each $1 of federal funds. The payment of the $10,000 allotment to Alaska has been made, and the survey is in progress.

The federal fund for hospital construction is $75,000,000, of which $41,400 is available to Alaska. The matching ratio of territorial and federal funds remains 2:1. The federal allotment is based on population and other factors. It penalizes the more thinly populated states and territories, because their need is relatively greater than their ability to match funds.

MENTAL HOSPITAL

No hospital for the care and study of mental diseases exists in Alaska. Indeed, there is no facility of any type available for mental patients. All persons committed to an institution for reason of mental disease are sent to Morningside, Ore.

The procedure of committing a person to a mental hospital is archaic and bears reporting. Any person may swear out a warrant attesting to the mental ills or incapacity of another. The "suspect" is then placed in confinement in a federal jail for ten days. During this time two physicians must examine the "suspect" and make statements as to their findings in the case. A jury then weighs the facts and signs the commitment papers if the patient is adjudged insane. The marshal then transports the patient to Morningside, Ore.

It should be observed that any citizen may make another a "suspect" only by swearing out a warrant; that the patient is confined in jail; that psychiatric studies are not mandatory and indeed are not possible, as only one physician in the territory practices psychiatry, and that only the marshal has custody of and transports the patient a considerable distance to Morningside, Ore. The marshal usually waits until he has an appreciable number of patients before he makes the trip "outside." Three hundred and ninety patients from the territory are at present confined in the sanatorium in Oregon. The Department of the Interior bears the expense of these confinements on a per diem per patient basis.

ALCOHOLISM

Alcoholism has assumed the proportions of an important problem in Alaska. In discussing the general and over-all health problems of the territory with physicians, teachers, military authorities and the "man on the street," the subject of alcoholism was always spontaneously referred to by them.

Alcoholism can rightly be classified as a disease. It accounts for a great deal of human suffering to both the victim and his dependents. Indigency, venereal diseases, poor housing, poor nutrition and general poor health can be attributed directly or indirectly to alcohol.

Alaska has been cited to the committee as having a larger per capita rate of alcohol consumption than any state.

The native does not appear to tolerate alcohol as well as the white man. In villages where alcohol was not permitted it was observed that housing and the general conditions were very good. The natives of these villages were well clothed and were better nourished. In villages where alcohol was sold the situation was quite reversed. It became easy, after a while, to determine from casual observation of the village whether alcohol was or was not a problem.

HOUSING

The acute housing shortage in Alaska enters into every phase of a discussion about the territory. Personnel problems in every governmental department as well as in private industry are related to the lack of adequate housing. The whole economy and defense of Alaska hinges on a stable permanent populace, and this is hindered by the housing problem.

Housing has not kept pace with the increase in population. During the war there was a complete restriction on the transportation of building materials for private use. Since the end of the war such factors as freight rates and scarcity of materials and skilled workers have combined to prevent the fulfilment of the need for more housing.

Not only is the quantity of housing appallingly insufficient, but the quality throughout the territory is extremely bad. It can be stated conservatively that 50 per cent of the housing in Alaska is substandard. Hundreds of houses in the coastal towns are built on piling over tidewater, and many have large and ancient accumulations of garbage and sewage beneath them. Hundreds of families, particularly in the vicinities of Anchorage and Fairbanks and along the highway, are living in huts, cabins, hovels, tarpaper shacks, tents and trailers. These dwellings are not situated where standardized and supervised facilities for water supply, sewage and garbage disposal exist.

It should be particularly emphasized that the entire situation not only is deleterious to the health of Alaska at present but is fraught with potential dangers for the future.

SUMMARY

The observations of this committee were essentially in agreement with the opinions previously expressed by the health authorities and other interested persons in the Territory of Alaska. The committee's tour of three weeks was a fairly comprehensive one, as the territory was traversed for a distance of 4,500 miles and all important parts, with the exception of the Aleutian chain, were visited. All facilities were made available to the committee, and these, with personal inspections, examination of patients and interviews, rounded out the perspective.

It must be evident immediately that the medical problems of a community the size of the Territory of Alaska are numerous and diverse. The climatic conditions and the lack of adequate transportation facilities serve to accentuate these problems.

Tuberculosis.—This is the most serious and urgent problem which faces the territory at present. The death rate is nine times greater than that of the United States. Facilities for the isolation, medical treatment and rehabilitation of tubercular patients are grossly inadequate. The recent removal of government financial support from one of the two available sanatoriums has seriously hampered the existing hospital situation. Alaska is an important cog in the defense of the United States only if its inhabitants are healthy. This is a problem which concerns the federal government and, as such, sufficient federal funds must be made available for its solution.

Eye Health.—Ulcers of the cornea and the resulting opacities with poor vision are widespread among the natives. The causes have not been determined and bear investigation. No ophthalmologist resides in the territory.

Venereal Disease Control.—The problem of venereal disease is becoming increasingly serious. Organized prostitution and alcoholism together with the rapid increase of population, both military and civilian, have been contributing factors. There are insufficient funds available for adequate treatment, especially among the indigent, and for an urgently needed venereal disease educational program.

Communicable Diseases.—The situation with regard to communicable diseases here is potentially very dangerous. Poor sanitation, inadequate housing and a rapidly expanding population are factors which breed epidemics of an explosive nature. No facilities exist for the isolation of patients with communicable diseases.

Sanitation.—Sanitation is very poor throughout Alaska, but especially so in the arctic regions where permafrost creates additional problems. Local communities have been unable adequately to establish a satisfactory water supply or sewage disposal system. The Territorial Division of Sanitation and Engineering is handicapped by serious personnel problems.

Orthopedics.—The principal cause of deformity and disability of the musculoskeletal system in persons in Alaska is tuberculosis of the bones and joints. The acquisition of Dr. Phillip H. Moore to head the orthopedic hospital at Sitka has been a great step forward in the care of these cases. A second orthopedic center at Anchorage to provide for 75 patients would probably be able to care for all additional orthopedic cases requiring hospital treatment.

Personnel.—Three main factors have deterred persons from accepting and holding positions in the territory. These are the high cost of living, the housing shortage and the isolation in remote communities.

Hospitals.—General hospitals are grossly inadequate to meet the current medical needs of Alaska, and if a sudden emergency were to arise the situation would be catastrophic. Again this is the result of a rapidly increasing population and a wartime lag in construction. Two hospitals have been recently destroyed by fire and many of the others are potential fire traps. There are no mental hospitals anywhere in Alaska.

Alcoholism.—The disease of alcoholism is of sufficient importance in Alaska to be mentioned as a factor contributing to many of the unsatisfactory conditions mentioned in this report.

Housing.—There is an acute shortage of satisfactory living quarters throughout the territory. This shortage seriously affects the health and the general economy of Alaska. The solution of the problem should be aided by active federal participation.

RECOMMENDATIONS

1. *Hospitals.*—There is danger of fire ever present in the presence of wooden hospital buildings. Furthermore, maintenance of wooden buildings is expensive. In spite of their high initial cost, it is urgent that new hospital construction be of a simple, fire-resistant type.

A. Beds for Tuberculous Patients: A minimum of one thousand beds should be provided at once for patients suffering from tuberculosis. This number includes sanatorium beds for the active treatment of tuberculosis as well as isolation units added to present scattered facilities. The isolation units will provide custodial care locally for patients with terminal disease and serve as diagnostic stations. The suggested localities and recommended number of beds are as follows:

Southeastern Alaska: Two hundred and twenty sanatorium beds by expansion of the present facilities at Alice Island.

Anchorage area: Four hundred sanatorium beds. This site is the center of population of Alaska as well as the most easily accessible one by virtue of the Alaska Railroad and highway.

Arctic area: One hundred bed sanatorium in Fairbanks.

Isolation units: Twenty-five beds each in Bethel, Kotzebue, Unalakleet, Fort Yukon and Nome. Government surplus quonset huts or other buildings may be obtained, and the units can be operated as an addition to the present Alaska Native Service or other hospitals.

B. General Hospital Beds:

Replace the hospital facilities at Palmer and Valdez, which have been destroyed by fire.

Build a hospital at Sitka, where the present facilities are makeshift and inadequate.

Replace the hospitals at Nome and Seward before a major catastrophe occurs.

Increase facilities at Fairbanks, Anchorage, Ketchikan and Juneau.

The foregoing recommendations for general hospital beds are made in keeping with the present needs as well as the growing population. The committee is cognizant of the fact that a hospital survey is under way by the Territorial Department of Health as provided by the Federal Hospital Survey and Construction Act. Specific facts and recommendations will result from this survey.

C. Communicable Disease Isolation Facilities: There are no beds for communicable disease. It is recommended that such facilities be incorporated in all general hospitals on the basis of population needs.

D. Orthopedic Beds: Fifty to seventy-five orthopedic beds are needed in the Anchorage area.

E. Mental Hospital: There should be a centrally located mental hospital. One such hospital can provide for the needs of the territory.

F. Anchorage Area: It is recommended that federal agencies and the local community in Anchorage jointly plan their hospital needs in order to eliminate duplication. The committee was informed that there are some forty federal agency offices in Anchorage.[1] The Alaska Railroad has estimated that it requires one hundred hospital beds. Other agencies have a need for and are planning for hospital facilities.

In planning for chronic diseases such as tuberculosis, orthopedics, mental diseases and other chronic conditions, the needs of other than federal beneficiaries must be kept in mind.

A hospital of seven hundred beds, broken down into four hundred for tuberculosis, seventy-five for orthopedics, one hundred for Alaska Native Service general, one hundred for Alaska Railroad general and twenty-five for communicable diseases, is recommended.

2. *Medical Needs for Alaska Native Service.*—A. Hospitals: Present bed capacity of the Alaska Native Service hospitals in the isolated areas is adequate if chronic diseases such as tuberculosis and orthopedics are removed to centers for special care, though each should have facilities for the isolation of communicable diseases including tuberculosis.

All Alaska Native Service hospitals need adequate equipment and maintenance. Critical equipment such as x-ray machines, oxygen units, sterilizers and motor vehicles (ambulances preferred) are needed at all hospitals. The hospital at Kotzebue especially requires a sterilizer and x-ray equipment.

If personnel is to be attracted, living quarters for a physician and his family must be provided at Kotzebue, Tanana and other installations which lack them.

The hospital at Kotzebue should be replaced after more urgent needs have been met.

B. Personnel: There are no physicians at present at Barrow, Tanana and Kanakanak, though appropriations for these positions have been made.

Positions for nurses, dentists and physicians are unfilled, with resultant serious effects on the over-all health problems.

Cognizance should be taken of the extreme isolation of many of the Alaska Native Service facilities. In order to attract desirable medical personnel an attractive employment contract should be set up. It should contain provisions for returning the physician to medical centers, at the expense of the Service, for postgraduate training at intervals of not more than three years.

Recognition of the fact that there is such extreme isolation should result in careful selection of physicians as regards individual adaptability.

Nursing personnel should have a choice of rotation in the different facilities as well as postgraduate training. Their work in isolated hospitals entails more x-ray and laboratory duties than are ordinarily expected of nurses. They should be trained in roentgenologic technic, in the performance of simple laboratory procedures and in anesthesia.

Nonprofessional personnel: Nonprofessional personnel must, of necessity, be drawn from the native population and must be trained in local medical installations. Physicians and nurses should be indoctrinated in this point of view.

3. *Tuberculosis.*—The disease of tuberculosis is prevalent in the native population. It is important to federal interests that the federal government provide a large share of the funds for its control.

A. Case Finding:

The approved methods and present efforts of the Territorial Department of Health toward mass roentgenologic case finding should be enhanced by more federal funds for reasons of the immensity of the problem, transportation costs, defense activities, migrant population from the states, war department workers and dependents of military personnel.

B. Hospitals: Hospital facilities for the treatment of tuberculosis must be greatly expanded. A total of at least one thousand beds is essential. One hundred and twenty-five beds divided into units of approximately twenty-five beds each should be set up in conjunction with the present isolated Alaska Native Service facilities or other hospitals. Suggested sites are Bethel, Kotzebue, Unalakleet, Port Yukon and Nome. The unit would be used specifically for isolation and custodial care of patients with open cases of tuberculosis. These cases can be divided into (*a*) those awaiting transportation to sanatoriums, (*b*) suspect cases under observation for diagnosis and (*c*) those cases that are too advanced to be amenable to active treatment. In addition to present facilities six hundred and twenty-five beds adequately staffed and equipped to permit modern treatment of tuberculosis are required. These should be distributed as follows: One hundred additional beds in southeastern Alaska; four hundred beds in Anchorage, and one hundred beds in the arctic (Fairbanks is the suggested site). Two hundred and fifty beds are in existence at Sitka and Seward.

C. Immunization: It is recommended that an extended immunization program with BCG or a similar method be undertaken among the native population of Alaska.

4. *Eye Diseases.*—The incidence of corneal ulcers is so excessively high that steps should be taken to determine its exact cause in order that prevention and treatment may be intelligently undertaken.

The lack of a qualified ophthalmologist in the territory should be remedied.

5. *Venereal Disease Control.*—Incorporated communities must bring their police codes up to date, and proper enforcement of these codes must be insisted on to aid in the control of venereal diseases.

The federal government should assist the territory in the control of venereal disease. The sudden increase of the population due to defense work, railroad rehabilitation, armed forces in the territory and rapid influx of transient workers has made the problem too large for the territory to handle by itself.

The U. S. Public Health Service should supply the director of the Division of Communicable Diseases, under whose direction the control program for venereal disease as well as other communicable diseases, except tuberculosis, would be adequately supervised.

6. *Sanitation.*—The deplorable conditions of the essential sanitation facilities of all Alaskan communities must be corrected. Local governments have not been able

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[1] The following are a few of the federal agency offices in Anchorage: Civil Aeronautics Authority; Veterans Administration; Weather Bureau; Alaska Railroad; Federal Bureau of Investigation; Fish and Wild Life; Land Management; Housing Authority; Rural Electrification; Department of Commerce; Post Office; Marine Division; U. S. Public Health Service, and War Assets Administration.

to cope with the problem, which has become acute because of the sudden increase of the population due to defense work, railroad rehabilitation, armed forces' dependents and migrations to the territory. The federal government has a responsibility in the establishment of improved water supplies, sewage disposal units and other sanitation facilities.

The sanitation problems in the arctic have not been entirely solved. The solutions are expensive and require outside assistance.

7. *Communicable Disease Control.*—The control of communicable disease is an increasing responsibility and difficult because of the increasing population. More federal responsibility in funds and personnel must be provided. There is the ever present threat of an epidemic which, if it were to occur, would endanger defense activities as well as the armed forces.

8. *Orthopedics.*—Federal aid to clean up the backlog of orthopedic cases, especially among the children, is urgently needed. The majority of the cases are among federal beneficiaries. Additional hospital facilities, as recommended herein, and professional personnel must be provided.

9. *Public Health Activities.*—The public health activities should be coordinated in that public health should be administered by the official agency (Territorial Department of Health) and hospitalization of federal beneficiaries should be administered by the Alaska Native Service. This may be accomplished over a five year period.

Such public health activities as the work of the *M/S Hygiene* and the mobile units (immunization, education, mass roentgenologic surveys and so forth) have included all elements of the population, but most of the work has been done for the natives. However, any activity of the Alaska Native Service precludes care to white persons or nonnatives.

The Territorial Department of Health is the recipient of federal funds such as tuberculosis control, crippled children and maternal and child health. The efficient administration of these benefits for the whole territory and for all of the population is best accomplished by the coordination of public health activities.

Public health nurses should be a cooperative activity between the Territorial Department of Health and the Alaska Native Service to the benefit of all. Contracts between the two agencies have been executed for such localities as Cordova, Sitka, Wrangell and Petersburg. More of this cooperation is recommended.

10. *Housing.*—In view of the deplorable status of housing and the very evident deleterious effects on health, immediate steps should be taken to remedy this situation. Because of the excessive costs of construction it is essential that the federal government take cognizance of and direct action to supply adequate funds for the solution of the problem.

11. *Arctic Institute.*—An Arctic Institute for the study of the Arctic and its bearing on health, sanitation, nutrition, engineering construction, food, clothing and footwear is recommended. This should be set up at the University of Alaska with federal funds, and it should coordinate the efforts of the armed forces and the various federal agencies. The resultant effects on the civilian economy of efficient means of heating, construction, sewage and water supply would be a boon to Alaskan development and defense.

Clinical Notes, Suggestions and New Instruments

LEUKOPENIA FOLLOWING THE USE OF PROPYLTHIOURACIL

WILLIAM J. EISENMENGER, M.D.
and
J. MURRAY STEELE, M.D.
New York

Propylthiouracil is generally conceded to be the least toxic antithyrotoxic agent at the moment. Serious reactions to this drug are almost lacking in the literature. Reports of two febrile and urticarial reactions in 129 cases[1] and of 1 case of leukopenia and sore throat in a series of 110 cases[2] have appeared. Astwood and VanderLaan have now treated over 100 patients without the development of any significant side effect.[3] In 260 patients treated with the drug at the Lahey Clinic depression of the white blood cell count has been noticed in 5 instances.[4] The development of pronounced leukopenia in a patient under treatment with this drug was therefore considered of sufficient importance to report.

A second point of interest in the case is the increasing degree of thyrotoxicosis that developed while propylthiouracil was being administered in what was thought to be an adequate maintenance dose.

REPORT OF CASE

A woman aged 65, a housewife, was admitted to this hospital on Feb. 3, 1946 with a chief complaint of weakness of four years' duration, which had become so extreme in the six weeks prior to admission that she was not able to walk or stand unsupported. She had also progressively lost 56 pounds (25 Kg.) in weight (170 to 114 pounds) during the previous year. For a period of six months she had noted excessive diaphoresis and a thinning of the texture of her hair. She had not been nervous or irritable, nor had she suffered palpitation or gastrointestinal symptoms.

Physical examination revealed a short, elderly woman with evidence of considerable recent loss of weight. Tremor and diaphoresis were absent. The common eye signs of thyrotoxicosis were lacking. There was a fulness in the suprasternal notch and a shift of the larynx and trachea to the left. A large mass of thyroid gland at the base of the neck on the right side extended downward into the superior mediastinum. A hard nodule 2 cm. in diameter was felt in the midst of this mass. The heart was moderately enlarged, the apical impulse being in the sixth left intercostal space, just outside the midclavicular line. The blood pressure was 170 systolic and 60 diastolic in mm. of mercury, and the pulse rate was 80. Normal sinus rhythm was present. Roentgen examination confirmed the impression of substernal extension of an enlarged thyroid gland. The basal metabolic rate was plus 54 per cent. The blood serum cholesterol determination was 173 mg. per hundred cubic centimeters. The hemoglobin level and the red blood cell count were normal, and the leukocytes ranged around 7,000 per cubic millimeter, with 65 per cent polymorphonuclear cells.

Because surgical removal of the thyroid appeared difficult, a trial of chemotherapy was decided on. Thiouracil, 0.1 Gm. four times a day, was administered, and the dose was reduced after one month to 0.1 Gm. twice a day, because the basal rate of the patient had fallen to nearly normal levels. In the

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From the New York University Division, Lenox Hill Hospital.

[1] McGavack, T. H.; Gerl, A. J.; Vogel, M., and Schutzer, S.: Clinical Comparison of the Effectiveness of 6-N-Propylthiouracil and 2-Thiouracil as Antithyrotoxic Agents, Am. J. Med. **2**: 144, 1947. Reveno, W. S.: Propylthiouracil in Thyrotoxicosis: Observations on Fifty-Four Patients, J. A. M. A. **133**: 1190 (April 19) 1947.

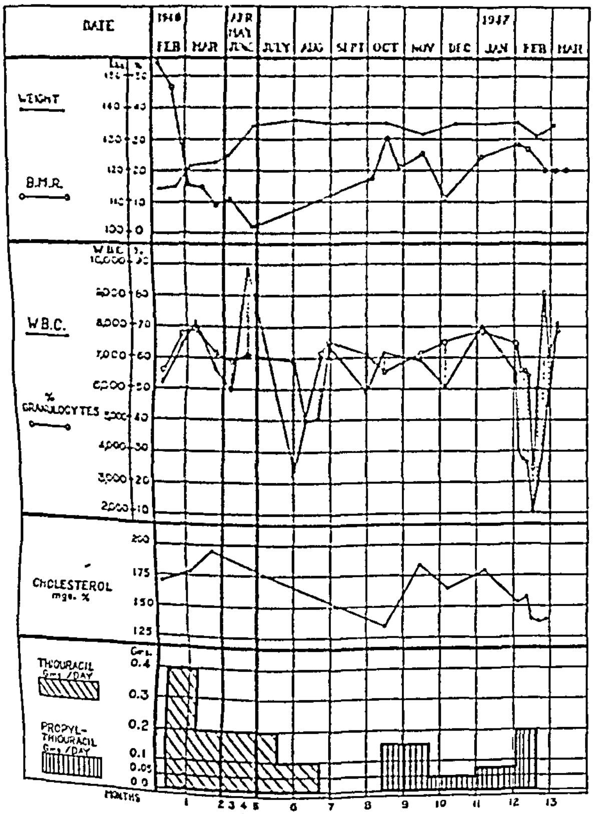
[2] McCullagh, E. P.; Ryan, E. J., and Schneider, R.: Propylthiouracil in the Treatment of Hyperthyroidism, Cleveland Clin. Quart. **13**: 232, 1946.

[3] Astwood, E. B., and VanderLaan, W. P.: Treatment of Hyperthyroidism with Propylthiouracil, Ann. Int. Med. **25**: 813, 1946.

[4] Lahey, F. H., and Bartels, E. C.: Use of Thiobarbital and Propyl Thiouracil in Patients with Hyperthyroidism, Ann. Surg. **125**: 572, 1947.

outpatient department this dosage was continued for four months and then further reduced to 0.1 Gm. a day for one month. At this point, because the white blood cell count was low (3,400) and a differential count showed only 40 per cent polymorphonuclear cells, the administration of thiouracil was discontinued. There was a prompt return of the blood count to normal levels, as shown in the accompanying chart.

During this six month period of thiouracil therapy the patient had been doing well, as shown by her gain in weight and the return to normal of basal metabolic rates. However, within two months of the cessation of thiouracil therapy (October 1946) her basal metabolic rate rose to plus 30 per cent, the serum cholesterol level fell to 126 mg. per hundred cubic centimeters and, most important, she experienced her first episode of auricular fibrillation. Slight dyspnea occurred with this attack, but signs of congestive cardiac failure did not develop. The leukocyte and differential counts were normal at this time.



Laboratory Data

Because of the development of leukopenia on thiouracil she was put on a regimen of propylthiouracil, 50 mg. three times a day. During the next month another episode of auricular fibrillation occurred. As her serum cholesterol reading rose from 126 to 186 mg. per hundred cubic centimeters and her basal metabolic rate decreased, the dosage was reduced from 150 to 50 mg. a day. She remained on this regimen for six weeks until, in January 1947, a rising metabolic rate prompted an increase in the dosage to 75 mg. a day. After one month on this dosage she began to complain of exertional dyspnea and frequent episodes of irregular rhythm of the heart. Electrocardiograms showed that auricular fibrillation was present. The patient was hospitalized again, and normal sinus rhythm returned. The serum cholesterol determination had dropped to 150 mg. per hundred cubic centimeters, and the basal metabolic rate had risen to plus 29 per cent. Leukocyte counts remained at normal levels (6,000) with a normal differential count (65 per cent polymorphonuclear leukocytes).

The patient apparently exhibited signs of progressive thyrotoxicosis while receiving moderate doses of propylthiouracil for over three months. The dosage was increased to 50 mg. four times a day on Feb. 2, 1947, but symptomatic improvement did not occur. In fact, the serum cholesterol reading dropped further (to 135 mg. per hundred cubic centimeters), and the patient continued to lose weight. The white blood count fell steadily to 2,100 cells per cubic millimeter, associated with a sharp drop in polymorphonuclear cells to 22 per cent of the total count.

In view of the failure of the propylthiouracil to maintain the patient in adequate control on the usual dose, but more especially because of the danger of a continued fall in the number of granulocytes, administration of the drug was discontinued and surgical removal of the gland was recommended. On discontinuance of propylthiouracil the leukocytes rose quickly to a level of 8,000, the main rise taking place in the number of granulocytes, which rose rapidly from 22 to 82 per cent of the total leukocyte count.

The patient was prepared for surgical intervention by being given strong solution of iodine U. S. P. 10 drops three times a day for two weeks, without significant change in her basal metabolic rate and serum cholesterol level Quinidine sulfate, 0.2 Gm. three times a day, was also given in an effort to prevent auricular fibrillation. A massive right lobe of the thyroid gland was then removed, and the relatively small left lobe was left. The operative procedure and the immediate postoperative course were uneventful except for several short bouts of auricular fibrillation.

SUMMARY AND CONCLUSION

A case of thyrotoxicosis due to a large nodular goiter treated with thiouracil for six months and propylthiouracil for four months is reported because of reactions which appeared on use of these drugs.

1. Mild leukopenia developed after six months on thiouracil therapy.
2. Severe leukopenia developed after four months of treatment with propylthiouracil. Seventy-five milligrams of the drug a day proved insufficient to control the basal metabolic rate. During a short period of administration of 200 mg. of the drug a day in an unsuccessful effort to control the disease, leukopenia developed.

Council on Foods and Nutrition

ACCEPTED JUICES

In order to encourage the production of fruit juices containing high natural levels of vitamin C, the Council on Foods and Nutrition accepts orange juice in which at least 40 mg. of ascorbic acid per hundred cubic centimeters of juice is conserved.

Attention is called to the fact that the products listed in this issue are not heat treated and should be consumed promptly after removal from refrigeration.

The following products meet the standards and rules established by the Council for fruit juices.

James R. Wilson, M.D., *Secretary.*

The Vacuum Foods Corporation, Plymouth, Fla.

Minute Maid Brand Quick-Frozen Concentrated Orange Juice (27 fluidounces, 799 cc.).

Snow Crop Brand Quick-Frozen Concentrated Orange Juice (5⅜ fluidounces, 159 cc.).

These products, identical in composition, are distributed in containers of two sizes, namely, 27 fluidounces for institutions and 5⅜ fluidounces for individual use.

Analysis (submitted by manufacturer).—The analysis of the concentrate and of the product as reconstituted by the addition of three parts of water is as follows:

	Concentrate	1 + 3 Dilution
Total solids, %	38.52	10.810
Moisture (by difference), %	61.48	89.190
Protein (N × 6.25), %	1.75	0.490
Fat (ether extract), %	0.09	0.030
Crude fiber, %	0.07	0.020
Carbohydrates, %	35.05	9.830
Ash, %	1.56	0.440
Calories, per gram	1.52	0.426
Ascorbic acid, mg. per 100 Gm.	159.30	44.700

THE JOURNAL OF THE
AMERICAN MEDICAL ASSOCIATION

535 North Dearborn Street - - Chicago 10, Ill.

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SATURDAY, OCTOBER 25, 1947

THE EFFECTS OF MINERAL OIL

The use of mineral oil in foods such as imitation mayonnaise or salad dressing increased during the war because of the shortage of biologic fats and oils.[1] Such food substitutes are used extensively also in weight-reducing diets. Previous reports concerning the interference of mineral oil with the absorption of fat-soluble vitamins, particularly vitamin A and its precursor, carotene, were based mostly on animal experiments in which large quantities of mineral oil were used, compared with what would ordinarily be taken by man. Curtis[2] and his associates showed that the ingestion of mineral oil by human beings will prevent a rise in blood carotene consequent to simultaneous intake of foods rich in carotene; the subjects in this experiment were observed for only fifteen days. Recently Alexander[1] and his associates made similar observations on human beings for three to eight weeks. Group 1 did not take mineral oil. Group 2 took 1 tablespoonful of a product containing 83 per cent mineral oil and 2 per cent fat with the noon and evening meal daily. Group 3 took 1½ teaspoonfuls of the same product with noon and evening meals daily. Group 4 took 1 tablespoonful of mineral oil with noon and evening meals. Group 5 comprised 9 patients with psoriasis vulgaris, of whom 6 took 1 tablespoonful of mineral oil with noon and evening meals and 3 took 1 tablespoonful with each of the three meals. The diets of all subjects were unrestricted. The plasma carotene and vitamin A concentrations were determined by Kimble's method at frequent intervals. The results indicated that concomitant with the prolonged daily ingestion of mineral oil, either as such or in the form of mayonnaise dressing at meal time, the plasma carotene concentration decreased about 50 per cent. The decline was about the same for those using 2 tablespoonfuls as for those using 3 teaspoonfuls, and differences were not observed between those using regular mineral oil and those using the product previously mentioned. The decrease in plasma carotene was noted within one to two weeks; it progressed further in many cases as the intake of mineral oil continued. Neither significant changes in the plasma vitamin A nor untoward clinical manifestations occurred. Since it is well known that the concentration of vitamin A in the blood remains relatively constant for as long as six months in normal persons subjected to restricted intake of vitamin A and carotene, a conclusion could not be drawn on these subjects with regard to the effect of mineral oil on the supply of vitamin A as such to the body. The conclusion, however, was that in man the simultaneous ingestion of mineral oil with food prevents substantial amounts of food carotene, a precursor of vitamin A, from entering the body.

While many physicians believe that mineral oil is not absorbable and therefore can do no harm, some of it prescribed for constipation does pass through the intestinal wall and on into the liver. Alvarez[3] reviewed the work of Frazer, Stewart and Schulman, who found that if mineral oil was ingested without previous emulsification only a small percentage of it was absorbed but that when given in the form of a fine emulsion, as many persons take it, about one half of it went through the wall of the bowel. These workers found also that the fine emulsification necessary for this process could be effected by a combination of bile salts, oleic acid and glyceryl monostearate which can be found in the bowel. When taken in the form of the clear oil much of it is emulsified in the stomach or bowel. Frazer and associates demonstrated such absorption through the intestinal mucosa of rats histologically, biochemically and by actually counting the tiny oil droplets found in the blood, which could be easily seen in the cells of the intestinal wall. With a special chemical technic they found that from 35 to 60 per cent of the amount of emulsified oil was absorbed, an amount comparing favorably with the percentage of olive oil absorbed in control experiments. Stryker found in various experimental animals that the extent to which lesions appeared in the liver and lymph nodes was related to the time the animals had been given mineral oil. Rabbits fed mineral oil more than seven months showed numerous tiny white nodules in their intestinal wall, and vacuolization appeared in the mesenteric lymph nodes and liver. Similar changes were found in the tissues of men and women who were known to have used paraffin oil; in fact in 15 of 25 consecutive necropsies the lymph nodes revealed the presence of such droplets of oil.

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[1] Alexander, B.; Lorenzen, E.; Hoffmann, R., and Garfinkel, A.: The Effect of Ingested Mineral Oil on Plasma Carotene and Vitamin A., Proc. Soc. Exper. Biol. & Med. **65**:275 (June) 1947.

[2] Curtis, A. C., and Kline, E. M.: Influence of Liquid Petrolatum on the Blood Content of Carotene in Human Beings, Arch. Int. Med., **63**: 54 (Jan.) 1939. Curtis, A. C., and Ballmer, R. S.: Prevention of Carotene Absorption by Liquid Petrolatum, J. A. M. A. **113**: 1785 (Nov. 11) 1939.

[3] Alvarez, W. C.: The Absorption of Hydrocarbon Oil in the Small Intestine, Gastroenterology **9**: 315-317 (Sept.) 1947.

These observations raise the grave question, Alvarez says, whether mineral oil can be used safely, year in and year out, as some persons use it; they also raise the question whether purveyors of food should ever be allowed to substitute mineral oil for the edible fats. The Council on Foods and Nutrition of the American Medical Association concluded in a report[4] published in 1943 that the indiscriminate use of mineral oil in foods and cooking is not in the interest of good nutrition and that any such use should be under careful supervision of a physician.

THE PROBLEM OF CEREBRAL PALSY

The Joint Legislative Committee appointed by the legislature of the state of New York[1] to study cerebral palsy has made a preliminary report indicating that less assistance has been given to those with cerebral palsy than to the blind, the deaf and the crippled. At least 10,000 persons have this disability in New York.

Older writers considered birth trauma including cerebral hemorrhage, asphyxia or circulatory interference the most important causative factor of cerebral palsy. Recent investigations, however, support the original statement of Little that "the condition may present itself as a congenital affliction or as a result of diseases during infancy. Cerebral palsy is probably in most cases the result of variations in the structure of the brain." The abnormality may vary from the slightest physical handicap to subnormal mentality and severe physical disability with inability to meet the simplest personal needs. The misconception that the mental development of the patient with cerebral palsy is necessarily retarded needs correction. As a matter of fact, mentality is normal in most instances; whatever mental retardation is present is due to a lesion of the area of the brain concerned with the development of intelligence. This occurs in a limited percentage of patients.

Diagnoses of mental deficiency are made frequently because of the patient's appearance and poor score on psychometric testing, although accuracy in such tests depends on proper coordination, normal speech and good vision and hearing. The report points out that the evaluation of the extent of physical and mental retardation is difficult even when the diagnosis of the condition is almost self evident. Evaluation requires determination of the type of qualitative motor defect, the degree of handicap, the parts of the body involved, the amount of involvement, the developmental progress that has been made, the presence of associated or independent defects and the social situation of the patient and the patient's family.

Proper diagnosis of cerebral palsy depends on the training of more medical specialists supplemented by psychologic examiners and specially devised testing and diagnostic procedures which are capable of reaching the real person through the mask of physical handicaps which stand between him and the examiner.

Treatment cannot eradicate the original lesion. Specific treatment can be given for some of the defects, but the patient must be trained rather than treated. Whatever latent resources he possesses can be activated to the fullest extent. Training consists primarily of physical and occupational therapy to help the patient achieve better coordination of movements, to control hyperactive movements and to overcome involuntary movements through relaxation and similar functions.

Specialists estimate that 65 to 70 per cent of patients with cerebral palsy have normal mentality. Improvement in such patients extends from simply acquiring the capacity to dress and feed themselves to complete vocational rehabilitation.

Children and adults with cerebral palsy are entitled to the same educational services under the laws of the state of New York as are provided for other physically handicapped persons. The State Department of Education is authorized to provide vocational education and training, maintenance, textbooks and supplies and orthopedic appliances to the physically handicapped in order to prepare them for useful employment. However, the report stresses that the total of specialized treatment now available is small in proportion to the need. For most of those with cerebral palsy thorough and specialized diagnosis is not available. A survey by the Children's Bureau, then of the United States Department of Labor, published July 15, 1946, revealed that little progress has been made in the various states in meeting the needs of children with cerebral palsy. Medical, surgical and therapeutic services for such children are either absent or inadequate, both as to the number of children reached and the scope of services.

The report of the Legislative Committee emphasizes that the situation is rapidly improving. The programs in several states includes special institutions, appropriations for specialized centers in connection with state university medical schools and state subsidization of services from private institutions. States have met the problem in different ways. The report suggests the general objectives to be sought in attempting to develop a program for New York. Private interest in this problem is needed to supplement the work of the state in the care of so many other groups of the unfortunate.

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[4] Mineral Oil (Liquid Petrolatum) in Foods, Report of the Council on Foods, J. A. M. A. 123:967 (Dec. 11) 1943.

[1] Preliminary Report of the New York State Joint Legislative Committee to Study the Problem of Cerebral Palsy, submitted to the legislature at the session of 1947, Legislative Document number 45.

World Medical Association

Note: Following is a report by Dr. Charles Hill, secretary of the British Medical Association, of the first meeting of the World Medical Association in Paris, September 18. Dr. Hill is honorary secretary of the World Medical Association pending the establishment of a permanent office and the appointment of a full time secretary. Dr. J. A. Bustamante of Havana, Cuba, secretary of the Pan-American Medical Confederation, was appointed as honorary assistant secretary for matters pertaining to the Latin American countries.—Ed.

CONSTITUTION

During the first part of the meeting, which took the form of a conference of representatives of national medical associations, various amendments were made in the draft articles and by-laws, which will now be revised in accordance with the decisions of the conference and issued with the minutes. When the constitution, thus amended, was adopted by the conference, it was formally declared that:

> In the city of Paris at 3:40 p.m., on September 18, 1947, the World Medical Association came into being.

The meeting then became the first annual meeting of the general assembly, and Professor Eugène Marquis (France) was installed as the first president of the association.

Dr. Charles Hill (Great Britain) was appointed acting honorary secretary of the meeting.

HEADQUARTERS

It was decided that the offices of the Association should be situated in North America, the exact location being left for decision by the council. One of the main factors influencing this decision was the desirability of close and constant contact with the United Nations and World Health organizations (U. N. O. and W. H. O.) which have their headquarters in New York.

OFFER OF FUNDS FROM THE UNITED STATES

The delegates from the United States reported that certain industrial "friends of the American Medical Association," being convinced of the potential value of the World Medical Association to medicine and to the promotion of world peace and being desirous of helping to establish it on a sound financial basis, had offered to guarantee an income of $50,000 for the first year and, if necessary, to continue a similar contribution for a further four years. The money was intended to be used for the provision of a permanent office, the remuneration of a full time secretary and staff and the running costs of the secretariat. An American committee of physicians and laymen had been set up to administer the funds. The American delegates emphasized that there was no intention of determining or interfering with the policy of the World Medical Association, the committee's only duty being to approve the general purpose of the projects for which the Association desired to use the donors' money. After a prolonged discussion the association decided by a majority vote to accept the generous offer of its American friends and adopted the following resolutions:

Resolved, That the general assembly accept with gratitude the offer of the friends of the American Medical Association and place on record its deep appreciation of their generosity in making available funds sufficient for the establishment of the World Medical Association on a satisfactory basis.

That the funds thus made available be utilized to defray expenditure under the following headings: (*a*) the remuneration and expenses of the secretary, other officials and clerical staff; (*b*) the rent, rates and other disbursements in connection with the official headquarters; (*c*) the general office expenses of the headquarters office staff; (*d*) the cost of the publication of the association's official bulletin or journal, and (*e*) the traveling costs of the council.

That the cost of the developments previously listed be estimated at not more than $50,000 for the first year.

That the Council be authorized to act on the assembly's behalf in appointing the secretary of the World Medical Association and to make all other staffing arrangements, regional and other.

That the Council be instructed to explore the possibility of making arrangements for gift funds to the World Medical Association to be made tax-free.

That member associations be recommended to consider the formation of World Medical Association supporting committees in their several countries.

That the council be authorized to prepare plans of development, to enter into any necessary consultations and to submit its proposals to the general assembly.

That nothing in these resolutions shall diminish the authority of the general assembly for the full control of the policy and affairs of the Association as provided in article 8.

SUBSCRIPTION

The acceptance of the American offer does not, of course, relieve the association of the necessity of collecting its own subscription income. After consideration of the report of the honorary treasurer and of the possible methods of assessing subscriptions, the general assembly adopted the following resolutions:

Resolved, That the subscription of each member association be calculated at a flat rate per member with a minimum total and a maximum total, and that the flat rate per member be 20 Swiss centimes, with a minimum of 1,000 Swiss francs and a maximum of 10,000 Swiss francs.

MEMBERSHIP ROLL

In accordance with article 5 (I) those national medical associations which were represented at the London conference in September 1946 were accepted as founder members. During 1946-1947 the Organizing Committee, which was instructed by the conference to proceed with the organization of the association, invited all national medical associations to apply for membership, and those applicants which appeared to fulfil the conditions of article 5 (II) were accepted as members.

As soon as the constitution was adopted at the Paris meeting, the procedure laid down in by-law 1 came into operation. Italy (La Federazione Nazionale degli Ordini dei Medici Italiani) made a written application for membership to the general assembly and was accepted. Certain difficulties then arose in connection with the associations in Latin America, and the general assembly eventually decided to request the council to submit for examination by next year's general assembly the applications of all member associations.

SECRETARIAT

As has already been stated, the general assembly left to the council the problem of the general organization of the secretariat. However, it considered the desire expressed by the Latin American associations for the specific recognition of the Spanish culture in the association's organization. They proposed the adoption of Spanish as a third official language and the appointment of a Spanish assistant secretary, whom they offered to finance without cost to the association. The assembly adopted the first proposal. With regard to the second, it recognized that with the development of the association's work it might become desirable to appoint perhaps several assistant secretaries in different parts of the world. It therefore instructed the council to include this matter in its consideration of the general organization of the secretariat and recommended for acceptance the kind offer of the Latin American associations.

PROXY VOTING IN ASSEMBLY

The general assembly referred to the council for consideration a suggestion by Australia that provision should be made in the by-laws for voting by proxy in the general assembly in order that far distant member associations which might be unable to send delegates to a meeting of the general assembly would not thereby lose their voting power.

WAR CRIMES

After a discussion of the motions on the agenda by Denmark and Great Britain and the British memorandum relating to the attitude of the members of the medical profession toward war crimes, and after hearing statements by members of the assembly and by a French medical victim of war crimes, the assembly appointed a small committee to formulate a recommendation. The following report of the committee was subsequently adopted by the assembly:

Resolved, That a report on crimes committed since 1933 by physicians and medical organizations in Germany and other countries and on this violation of the medical ethic be prepared and made available to physicians throughout the world.

That the World Medical Association solemnly condemns the crimes against human beings committed by certain members of the medical profession such as are described in the British memorandum.

That every doctor, at the time of receiving his medical degree or diploma, be required to subscribe to the following oath

> "My first duty, above all other duties, written or unwritten, shall be to care to the best of my ability for any person who is entrusted or entrusts himself to me, to respect his moral liberty, to resist any ill treatment that may be inflicted on him and, in this connection, to refuse my consent to any authority that requires me to ill treat him.
>
> Whether my patient be my friend or my enemy, even in time of war or in internal disturbances, and whatever may be his opinions, his race, his party, his social class, his country or his religion, my treatment and my respect for his human dignity will be unaffected by such factors."

That the World Medical Association endorse judicial action by which members of the medical profession who shared in war crimes are punished.

That the World Medical Association request the German medical syndicates to make the following public declaration

> A. We, members of the German medical syndicate, are aware of the very large number of acts of cruelty committed, both by individuals and collectively, since 1933 in mental hospitals and in concentration camps and of the violation of the medical ethic. These acts have resulted in the death of some millions of persons. A large number of our members have been implicated in these acts, either as instigators or as technical agents or as actual perpetrators.
>
> B. We regret that the organized medical profession in Germany has not made any protest and has been content to ignore these acts, of which it could not have been unaware.
>
> C. We undertake solemnly to condemn these crimes, to expel from our organization the criminals who have committed them and to remind all our members of the respect due not only to life but to human personality, dignity and liberty.

The assembly instructed the council to prepare a report incorporating these resolutions and also to take into consideration the following motion by the Netherlands: "That the council be instructed to prepare a report on the collaboration of medical practitioners in the preparation of means of warfare."

MATTERS REFERRED TO COUNCIL

During the course of the meeting the general assembly also referred the following matters to the council for appropriate action or investigation and report:

1. The general arrangements for the organization and publication of a bulletin or journal.

2. The preparation of a report on the inquiry into the present position of the medical profession in relation to the state.

3. The motions of Luxembourg, supported by Australia, recommending the preparation (*a*) of a comparative statement on standards of training for the medical profession and conditions of registration and (*b*) of a comparative statement on the qualifications of specialists.

4. The following motions by India: (*a*) "That the council be requested to study and report on the question of the advertisement of cures and medicines in the lay press" and (*b*) "That the council be requested to study and report on the question of unqualified and unauthorized medical practice."

5. The preparation of standing orders to govern the procedure of meetings of the general assembly.

6. The appointment of auditors.

SECOND ANNUAL MEETING OF GENERAL ASSEMBLY 1948

The general assembly decided to hold its 1948 meeting in Prague, Czechoslovakia, the exact date being left to the council to decide.

PRESIDENT-ELECT, 1947-1948

The general assembly elected Dr. J. Stucklich (Czechoslovakia) to preside over its annual meeting in 1948. He therefore becomes president-elect for the year 1947-1948.

TREASURER, 1947-1950

The general assembly elected Dr. O. Leuch (Switzerland) as treasurer of the Association for the period of 1947-1950.

COUNCIL, 1947-1948

The general assembly elected the first council. Dr. Zahor (Czechoslovakia) and Dr. Glorieux (Belgium) having resigned after election, the council for 1947-1948 is composed as follows: president ex officio, Professor E. Marquis, France; president-elect, Dr. J. Stucklich, Czechoslovakia; treasurer, Dr. O. Leuch, Switzerland; chairman, Dr. T. C. Routley, Canada, and vice chairman, Dr. D. Knutson, Sweden. Other members of the council are Drs. L. H. Bauer, United States; J. A. Bustamante, Cuba; P. Cibrie, France; A. Hartwich, Austria; P. Z. King, China; J. A. Pridham, Great Britain; S. C. Sen, India, and L. G. Tornel, Spain.

At the conclusion of the general assembly's proceedings the council held its first meeting.

Pending the establishment of a permanent office and the appointment of a full time secretary, the council appointed Dr. Charles Hill (Great Britain) as honorary secretary of the association with temporary headquarters at B. M. A. House, London.

Washington Letter

(From a Special Correspondent)

Oct. 23, 1947.

Funds for New Army Medical Library

Brig. Gen. George E. Armstrong, acting surgeon general of the Army, told the fourth annual meeting of the honorary consultants to the Army Medical Library that the War Department would again request funds from Congress next year for a new building. Cost is estimated around $16,000,000, four times the amount sought nine years ago. Congress will have to amend existing enabling legislation before an appropriation can be requested. Col. Joseph H. McNinch, library director, reported that the present building at Seventh Street and Independence Avenue, S.W., is inadequate. He said that one of the library's greatest needs is a permanent director. At present, Army officers are appointed to the post every four years. General Armstrong explained that the War Department already is planning to acquire a career director. Among other speakers were: Gen. Paul R. Hawley, medical director of the Veterans Administration; Walton B. McDaniel, librarian, Philadelphia College of Physicians, and Chauncey D. Leake, dean of the University of Texas School of Medicine. New officers elected were: president, Dr. Leake; vice president, Wilburt C. Davison, Raleigh, N. C., dean of Duke University School of Medicine, and secretary-treasurer, reelected, Col. Harold W. Jones, M. C., U. S. Army, retired. Dr. Reginald Fitz, Boston, medical history lecturer, Harvard University, was appointed to the executive committee.

Health Service Announces Cancer Research Grants of $363,749

The U. S. Public Health Service has announced that grants totaling $363,749 have been made to nearly a score of colleges and other institutions for cancer research and control. They are part of the $14,000,000 campaign against cancer authorized by Congress for the fiscal year ending next June 30. The projects were recommended by Dr. A. V. Deibert of the National Cancer Institute and approved by the National Advisory Cancer Council. The grants include research for improved cancer instruction technics, a national survey of cancer clinics, evaluation of different cancer control and detection methods and fundamental studies of the growth, development and treatment of cell malignancies. A joint Public Health Service and District of Columbia survey revealed that Washington has the highest cancer incidence of twelve cities surveyed.

Dr. Paul B. Magnuson Takes Number Two Spot in Veterans Administration

Dr. Paul B. Magnuson, Chicago surgeon who helped set up the Dean's Committee program which links Veterans Administration hospitals with the nation's best medical centers, has been appointed chief of professional services for the Veterans Administration Medical Department. This is the number two position. In the event that Dr. Hawley succeeds Gen. Omar Bradley as head of the agency when the latter is appointed Army Chief of Staff, Dr. Magnuson will be in line for the medical directorship. Dr. Magnuson succeeds the late Brig. Gen. Elliott C. Cutler, who died last August in Boston.

mittee that is carrying on the recruitment program hopes to be able to get 50,000 or 60,000 student nurses this year. The general impression around the country is that there will be more student nurses than there were last year.

In connection with the problem of the nurse shortage, there has been a great deal of discussion as to the desirability of producing more practical nurses. The professional nurses have raised their educational standards and perhaps are getting themselves out of bedside nursing. In Michigan the State Board of Education, in cooperation with the nursing organizations, has outlined a program by which six practical nurse training centers will be established in the larger cities patterned after a similar project that has been going on in Detroit for a number of years. These practical nurses will be recruited from the senior students in high schools. The teachers will be registered nurses on the high school faculties. We expect to start this program when the schools open in the fall. This is a part of the vocational education system. Under this program standards for practical nursing service will be established. It is considered that this type of nurse will be able to do from 80 to 90 per cent of the ordinary bedside nursing in hospitals.

A development which should receive consideration is the matter of the universities beginning to take over the education of registered nurses.

REPORT OF SUBCOMMITTEE ON SPECIALTY BOARD FOR GENERAL PRACTITIONERS—CONTINUED

Drs. Bierring and Sensenich, members of the Subcommittee, and Miss Switzer, whose consultation they had requested, returned to the meeting and submitted the following report, which was adopted unanimously:

> The Joint Committee for the Coordination of Medical Activities desires to record its recognition of the distinct contribution of specialty boards to the elevation of medical standards and the quality of medical practice in this country. However, the growing tendency to exclude the general practitioner from hospital staff privileges is having the effect of making it impossible for the general practitioner to secure the advantages of modern hospital facilities for the treatment of his patients. This is true in spite of the fact that by far the largest group of patients in the country relies on the general practitioner for medical services.
>
> The Committee feels that there is need for a better understanding of the role of the general practitioner in medical service and, therefore, recommends a long range program on the part of all professional bodies concerned to this end.
>
> The Committee does not believe the setting up of a specialty board for general practice meets the need at this time. However, there is immediate need for the integration of general practitioners into the hospital staffs throughout this country, and to accomplish this the Committee recommends that the Council on Medical Education and Hospitals of the American Medical Association develop as soon as possible several alternate plans.
>
> The Committee further recommends that the American Medical Association and other professional organizations, as well as the national hospital associations, in their regional and annual meetings and in their publications give prominent place to a discussion of how this hospital staff integration can best be accomplished in order to make available for each eligible physician and his patients all the facilities provided for medical care in the community.

Mr. Davis discussed the subject as follows: With respect to the responsibility of the hospitals, I think it would be the general policy of the American Hospital Association to say that every reputable physician should have a hospital staff appointment. It seems to me that the whole problem at the present time stems from the fact that there is a maldistribution of physicians and also a shortage of hospital beds, particularly in the big cities. The physicians coming back from military service are crowding into the large cities, and that is where the problem exists. It does not exist outside the metropolitan areas. Hundreds of hospitals in this country have no specialists on their staffs. There is a hospital in Michigan where there are only two specialists, and the general practitioners are keeping out the specialists. A person who gets into a hospital ordinarily needs a specialist. The hospitals are confronted with the problem of providing to the public the highest possible quality of service.

REPORT FROM LIAISON REPRESENTATIVE OF OFFICE OF THE SURGEON GENERAL

Colonel Armstrong brought to the attention of the Committee correspondence with young physicians, graduates of the Army Specialized Training Program, who are now in service. He said the letters follow a familiar pattern complaining about foreign duty, about lack of rotation between tactical units and hospitals and about the deferment of presently interning A. S. T. P. men when the writers are being held in service twenty-four months. Basically, he said, they reflect the fact that anything which has to do with military service at the moment is not popular.

Colonel Armstrong continued: These men cannot understand that they can learn something from sick call duty; those who are the least unhappy are those who are in a teaching hospital *with a "Board" man as chief; some of the letters are from* Korea, and many of the complaints from that theater are justifiable; General MacArthur has promised to investigate; the trouble is recognized and steps are being taken to correct it. The Office of the Surgeon General is "surplusing" every day; a check is kept on all theaters to see that the surplus is sent back.

The Chairman thanked Colonel Armstrong for his presentation.

AMERICAN RED CROSS BLOOD BANK PROGRAM

Dr. Draper presented information concerning the Red Cross Blood Bank Program.

TIME AND PLACE OF NEXT MEETING

It was voted to hold the next meeting at American Medical Association Headquarters in Chicago on Saturday morning, Aug. 16, 1947.

Coming Medical Meetings

Conference of State Medical Society Secretaries and Editors, Chicago, A.M.A. Headquarters, Nov. 7-8. Dr. George F. Lull, 535 N. Dearborn St., Chicago 10, Secretary.

American Academy of Allergy, St. Louis, Hotel Jefferson, Dec. 15-17. Dr. Theodore L. Squier, 425 E. Wisconsin Ave., Milwaukee 2, Secretary.

American Academy of Dermatology and Syphilology, Chicago, Palmer House, Dec. 7-11. Dr. Earl D. Osborne, 471 Delaware Ave., Buffalo, N. Y., Secretary.

American Academy of Pediatrics, Dallas, Texas, Dec. 8-11. Dr. Clifford G. Grulee, 636 Church St., Evanston, Ill., Secretary.

American Association of Railway Surgeons, Chicago, Nov. 23-25. Dr. Raymond B. Kepner, 547 West Jackson Boulevard, Chicago 6, Secretary.

American Otorhinologic Society for the Advancement of Plastic and Reconstructive Surgery, New York, Nov. 13. Dr. Norman N. Smith, 291 Whitney Ave., New Haven 11, Conn., Secretary.

American Society for the Study of Arteriosclerosis, Chicago, Hotel Knickerbocker, Nov. 2-3. Dr. O. J. Pollak, Wilmington General Hospital, Wilmington 14, Delaware, Secretary.

American Society of Anesthesiologists, New York, Hotel New Yorker, Dec. 4-5. Dr. Curtiss B. Hickcox, 745 Fifth Ave., Room 1503, New York 22, Secretary.

American Society of Clinical Pathologists, Chicago, Drake Hotel, Oct. 28-30. Dr. A. S. Giordano, 531 N. Main St., South Bend, Ind., Secretary.

American Society of Tropical Medicine, Atlanta, Ga., Dec. 2-4. Dr. Norman H. Topping, National Institute of Health, Bethesda 14, Md., Secretary.

Association of American Medical Colleges, Sun Valley, Idaho, Oct. 27-29. Dr. Fred C. Zapffe, 5 S. Wabash Ave., Chicago, Secretary.

Association of Military Surgeons of the United States, Boston, Hotel Statler, Nov. 13-15. Col. James M. Phalen, Army Medical Museum, Washington 25, D. C., Secretary.

Central Society for Clinical Research, Chicago, Drake Hotel, Oct. 30-Nov. 1. Dr. Ford K. Hick, 25 E. Washington St., Chicago 2, Secretary.

Indiana State Medical Association, French Lick, Oct. 28-30. Mr. Ray E. Smith, 23 E. Ohio St., Indianapolis 4, Executive Secretary.

New England Postgraduate Assembly, Boston, Copley-Plaza Hotel, Oct. 29-31. Dr. Leroy E. Parkins, 8 Fenway, Boston 15, Chairman.

New York State Association of Public Health Laboratories, Albany, Nov. 7. Miss M. B. Kirkbride, New Scotland Ave., Albany 1, Secretary.

Oklahoma City Clinical Society, Oklahoma City, Biltmore Hotel, Oct. 27-30. Dr. Elmer R. Musick, 512 Medical Arts Bldg., Oklahoma City, Director of Clinics.

Omaha Mid-West Clinical Society, Omaha, Oct. 27-31. Dr. John M. Thomas, 1031 Medical Arts Bldg., Omaha 2, Secretary and Director of Clinics.

Post Graduate Medical Assembly of South Texas, Houston, Texas, Coliseum, Dec. 1-3. Dr. E. Trowbridge Wolf, 229 Medical Arts Bldg., Houston, Texas, Secretary.

Puerto Rico, Medical Association of, San Juan, Dec. 10-14. Dr. Jeramfel Cordero, Box 3866, Santurce, Secretary.

Radiological Society of North America, Boston, Nov. 30-Dec. 5. Dr. Donald S. Childs, 607 Medical Arts Bldg., Syracuse 2, N. Y., Secretary.

Seaboard Medical Association of Virginia and North Carolina, Virginia Beach, Va., Dec. 2-5. Dr. Clarence Porter Jones, 3117 West Ave., Newport News, Va., Secretary.

Southern Medical Association, Baltimore, Nov. 24-27. Mr. C. P. Loranz, Empire Bldg., Birmingham 3, Ala., Secretary.

Southwestern Medical Association, Phoenix, Ariz., Hotel Westward Ho, Nov. 6-8. Dr. Louis W. Breck, 116 Mills St., El Paso, Texas, Secretary.

Southern Surgical Association, Hollywood, Fla., Dec. 9-11. Dr. Alfred Blalock, Johns Hopkins Hospital, Baltimore 5, Secretary.

Western Surgical Association, Colorado Springs, Broadmoor Hotel, Dec. 4-6. Dr. Warren H. Cole, 1853 West Polk St., Chicago 12, Secretary.

GOVERNMENT SERVICES

VETERANS ADMINISTRATION

INTENSIVE RESEARCH ON HEART DISEASE

The Veterans Administration announces that intensive research in heart disease will be centered at the Mount Alto Hospital in Washington, D. C. The new research center, a part of which is already in operation, will conduct investigations on cardiovascular physiology and pathology for the primary purpose of improving the treatment of veterans. It will serve also as a training center for physicians by providing graduate study and resident training for certification by the American Board of Internal Medicine. The new center will provide consultation service in cardiovascular disease. The center will have the following eight major functions: treatment, clinical research, cardiovascular roentgenography, cardiac catheterization and hemodynamics, electrocardiography, pathology, statistical research and postgraduate teaching; later departments for research in biochemistry and biophysics will be added. The research center was developed under the supervision of Dr. George P. Robb, assistant medical director of the Metropolitan Life Insurance Company, who will continue as consultant to the cardiovascular research unit. Dr Robb, a graduate of Indiana University School of Medicine, has conducted research projects at Harvard Medical School and New York University College of Medicine and during World War II was chief of the cardiovascular and electrocardiographic departments of Walter Reed General Hospital, Washington, D. C.

DR. MAGNUSON APPOINTED CHIEF OF PROFESSIONAL SERVICES

The Veterans Administration announces the appointment of Dr. Paul B. Magnuson, Chicago, as acting chief of its Professional Services to succeed the late Brig. Gen. Elliott C. Cutler, who died August 16. Dr. Magnuson, formerly chairman, Department of Bone and Joint Surgery, Northwestern University Medical School, Chicago, came to the Veterans Administration in November 1945 on leave from Northwestern to assist the medical director in the reorganization of medical care for veterans. He has been with the Veterans Administration since then as acting chief of the Research and Education Service and will be succeeded in that position by Dr. Edward H. Cushing, former associate clinical professor of medicine, Western Reserve University, Cleveland, who has been associated with Dr. Magnuson as chief in that work.

PUBLIC HEALTH SERVICE

CANCER RESEARCH AND STUDY PROJECTS

The U. S. Public Health Service announced October 8 the award of more than $375,000 in grants for special research and study on improving technics for professional cancer instruction, a nationwide survey of cancer clinics and evaluation of cancer control measures. These awards, a part of the $14,000,000 cancer research and control program authorized by the last session of Congress, were reviewed and approved by the National Advisory Cancer Council, a nongovernmental committee of cancer specialists. Among the projects approved and the sums granted are the following:

Yale University School of Medicine, $25,000.00. Improvement of cancer teaching.

Washington University at St. Louis, $10,800 00. Experiment in medical education and oncology.

Medical College of the State of South Carolina, $21,800.00. Establishment of cancer control clinic, teaching and research

Ohio State University College of Medicine, $24,800.00. Coordination of cancer teaching.

University of Chicago, $24,840.00. Development of research and teaching of cancer biology in a unit of oncology.

University of Tennessee, $24,035.40. Improvement and coordination of cancer teaching.

Tufts College, $24,820.00. Cancer control teaching.

Georgetown University, $24,500.00. Cancer teaching.

University of North Carolina, $3,400.00. Visual aids program for teaching pathology of neoplasms to medical students.

American *College of Surgeons, $30,340.00. Survey of cancer clinics* throughout the United States.

Tennessee Department of Public Health, $5,440.00. Epidemiologic and statistical research.

American Cancer Society, $36,600.00. Cooperative project for the production of diagnostic motion pictures.

Cornell University, $37,800.00. Establishment of a center for the study and instruction in the cytologic method for cancer diagnosis.

Maryland State Department of Health, $11,695.00. Evaluation of the cy*tologic test for cancer.*

University of Minnesota, $21,250.12. Establishment of a model cancer detection center.

Georgetown University, $9,000.00. Follow-up studies of benign and malignant tumors.

University of Louisville, $7,000.00. Follow-up and analysis of cancer cases treated at Louisville General Hospital over the last twenty years.

Michigan Department of Health, $1,800.00. Training of pathologists in the technic of the cytologic test for cancer.

State Department of Health of Kentucky. Cytologic test training project, $2,250.00. Operation of a mobile diagnostic and treatment clinic, $11,700.00.

University of Tennessee, $4,878.48. Survey of the cytologic test for cancer in the city hospital.

MISCELLANEOUS

SALE OF SURPLUS GOVERNMENT PROPERTY

The War Assets Administration is conducting sales of surplus government property announced by the following regional offices. Physicians who are veterans have certain priorities in the purchase of surplus government property.

Chicago.—Sale of drugs, medicine and cosmetics. Beginning October 24 priority-registered hospitals may buy throughout October 30; wholesale and retail drug outlets and certified physicians may buy starting November 3. The property for sale is located in building 3212 B, Great Lakes, Ill.

Seattle.—Sale of drugs, bandages, splints and heating pads. Bids open November 7 for commercial buyers. No priority rights, as this property was previously offered to priority claimants. Bids must be received at the War Assets Administration Customer Service Center, 1409 Second Avenue, Seattle, before 11 a. m. November 7.

St. Louis.—Sale of drugs, medical supplies and equipment to priority claimants and commercial buyers to December 17. Bids may be sent to any WAA Customer Service Center (of which there is at least one in every state and in some states many). A deposit of 10 per cent of the total offering price must accompany each offer, and on any order exceeding $100,000 the customer must add 2 per cent of the amount of excess to the 10 per cent deposit required on smaller sums.

Louisville.—Sale of drugs, chemicals, surgical instruments, sterilizers, autoclaves, laboratory lamps, hospital equipment and supplies, and culture mediums and solutions. Sale opens to priority claimants only starting October 27. This sale is said to include $10,000,000 worth of government property with 1,800 different items from which to select. The Customer Service Center in Louisville is at 410 West Jefferson Street, but information can be obtained from any other Customer Service Center in the country.

Medical News

(Physicians will confer a favor by sending for this department items of news of general interest: such as relate to society activities, new hospitals, education and public health. Programs should be received at least two weeks before the date of meeting.)

CALIFORNIA

Trichinosis and a Hamburger.—The first case of trichinosis in Los Angeles County in two years was recently reported by the Los Angeles County Health Department. County food and drug inspectors found that the infected person had eaten raw hamburger ground in the same machine used for grinding pork and sausage.

Symposium on Heart Disease.—The Heart Division of the San Francisco Tuberculosis Association will present a symposium on heart diseases October 29 to November 1 at the St. Francis Hotel at 2 p.m. The first afternoon's program, sponsored by the American Academy of Pediatrics, Northern California, will be devoted to heart disease in children. Speakers from this state and guests from other parts of the country will take part in the program.

Hospitals Merge to Form Medical Center.—The merger of Mount Sinai Hospital, Los Angeles, and the Los Angeles Sanatorium at Duarte has been completed to form the Mount Sinai-Duarte National Medical Center. Directors of the hospitals will serve as associate directors in the same capacities they held previously. The Los Angeles Sanatorium has provided free care for the tuberculous poor since 1913, while Mount Sinai Hospital has been active since 1920 in caring for those suffering from chronic ailments. The Mount Sinai Clinic has offered additional services to the Los Angeles needy. The center is dedicated to providing medical care for those suffering from chest diseases, cancer, heart disease and other major illnesses. The Medical Center will create facilities for postgraduate medical education, a nurses' training school, medical research and eventually a medical school under Jewish auspices. New buildings under construction at Duarte will accommodate more than 700 patients.

COLORADO

Annual Meeting of the State Society.—At the seventy-seventh annual session of the Colorado State Medical Society, September 17-20, the house of delegates adopted recommendations of its various committees, some of which follow:

1. The establishment of a statewide service for rehabilitation of civilians suffering physical handicaps, to provide for the nonmilitary victims care and rehabilitation equal to that now provided war veterans.
2. Revision and improvement of the whole field of neuropsychiatric care in the state.
3. Setting up a *non-tax-supported, community operated and controlled* child guidance center in Denver.
4. Approval of a six point program for the improvement of industrial health laws and services in the state with special consideration of the smaller, more widely dispersed industrial plants.
5. Approval of a seven point program for the improvement of rural health in the state with emphasis on expansion of the coverage of rural residents under Colorado Medical Service, Inc., the society-sponsored prepayment medical care plan.
6. Assumption of leadership toward establishment of scientifically planned health education in all levels of the state's educational system.
9. Expansion of Colorado Medical Service, Inc., from its present limited *surgical care plan operations to include nonsurgical conditions.*

The house of delegates created a Board of Supervisors, which will serve both in the general capacity of a "grand jury" and as a continuing study group to issue periodic advice to the members of the medical profession on matters of ethics and public conduct. It is empowered to receive complaints from physician and layman alike and, when justified, to prosecute charges against any erring physician before a local board of censors, the state Board of Councilors, the official Colorado State Board of Medical Examiners or any court. A temporary board of supervisors of twelve members, no two from the same component society, was nominated and elected to serve until a permanent board can take over under a constitutional amendment which will require one year to become effective. It was provided that no member of the board may participate in proceedings which affect a member of his own component society. The society voted also to join with the Colorado State Dental Association in cosponsorship of the proposal for establishing an approved school of dentistry in Colorado. There is no dental school in the Rocky Mountain region. The house of delegates directed that a new special committee be charged with the development of standards with which governmental and private agencies dealing with health and medical care problems must comply in order to obtain or maintain support of the medical profession. At this annual session the society awarded two special certificates, one to Dr. Florence R. Sabin, Denver, "for her life-long devotion to medical research and public health"; the other to Dr. Ella A. Mead, Greeley, in recognition of her more than twenty years of service as a member, and many times chairman, of the society's Board of Councilors. The following officers of the Colorado State Medical Society were installed: Drs. John S. Bouslog, Denver, president; Casper F. Hegner, Denver, president-elect, and George C. Shivers, Colorado Springs, treasurer.

CONNECTICUT

Yale Reorganizes Psychiatry Department.—Complete reorganization of the department of psychiatry at Yale University School of Medicine, New Haven, with emphasis on the newest methods of treating mental illness, expanded instruction of medical students and residency training in cooperation with the Veterans Administration was announced October 2. Personnel changes include the appointment of Drs. Frederick C. Fedlich, New Haven, executive officer of the department; Burness E. Moore, New Haven, physician-in-charge of the psychiatric inpatient clinic, and Richard J. Newman, Maryland, N. Y., physician-in-charge of the outpatient clinic. Dr. Lawrence S. Kubie, New York, has been appointed clinical professor of psychiatry; *Dr. Robert P. Knight, Stockbridge, Mass., clinical* professor, and Dr. Paul I. Yakovlev, Middletown, as associate clinical professor. The psychiatric inpatient clinic in the Yale Institute of Human Relations Building is in process of being completely renovated. Increasing emphasis will be placed in the clinic on the psychoneuroses and on psychosomatic disorders. Patients will be cared for jointly by the psychiatric staff and internists of the staff of the Yale School of Medicine and the New Haven Hospital. An individualized treatment program has been set up with major emphasis on psychotherapy, in which resident physicians will be carefully supervised. Two occupational therapeutists will be added to the staff. Yale Divinity School students will serve as male attendants in the wards as a part of their teaching program. Increasing emphasis will be placed on instruction of medical students in psychiatry. A new approach at Yale is the plan to help students to deal more adequately with psychiatric problems in general practice or in the specialties other than psychiatry. A new residency training program in neuropsychiatry, which will be under the Dean's Committee of the Veterans Administration, was started at Yale on October 1. A Veterans Administration contract clinic is presently operating in the psychiatric outpatient clinic. A Connecticut postgraduate seminar in neuropsychiatry has been organized and will be sponsored by the Joint State Hospital Committee and Yale. The psychiatry department will cooperate closely with the Yale Divinity School, Law School, Institute of Human Relations, the department of psychology, department of public health and the division of psychiatry of the Yale Department of University Health under Dr. Clements C. Fry.

FLORIDA

Four District Meetings.—The Florida Medical Association has arranged four district meetings for its membership with programs beginning at 2:30 p.m. and ending with dinner.

Northwest Medical District, October 27, St. Andrews Bay Yacht Club, Panama City.
Southwest Medical District, October 29, Yacht and Country Club, Lakeland.
Southeast Medical District, October 30, *New Fort Pierce Hotel, Fort* Pierce.
Northeast Medical District, November 1, St. Augustine Country Club, St. Augustine.

Scientific assemblies and general sessions are included in the programs.

Cancer Seminar at Jacksonville.—A three day seminar on cancer will be held in Jacksonville November 12-14. There will be no registration fee. Funds for the project have been provided by the Florida Division of the American Cancer Society and the Florida State Board of Health. The Tumor Clinic of the Duval County Hospital initiated the project, and the physicians of Duval County will be the hosts. Invitations have been issued to all members of medical societies of the Southeastern states. Speakers will be:

Emil Novak, Baltimore, Tumors of the Female Genital Tract.
Samuel F. Marshall, Boston, Tumors of the Gastrointestinal Tract.
Archie L. Dean, New York, Tumors of the Genitourinary Tract.
Everett D. Sugarbaker, Jefferson City, Mo., Tumors of the Breast.
George T. Pack, New York, Mixed Tumors.
James E. Scarborough, Atlanta, Ga., Tumors of the Head and Neck.
Herbert D. Adams, Boston, *Tumors of the* Chest.
Roscoe R. Spencer, Bethesda, Md., Cancer Research.
Everett L. Bishop, Atlanta, Ga., Tumor Pathology.

ILLINOIS

Graduate Conference at Rockford.—The Illinois State Medical Society has arranged a postgraduate conference for the First Councilor District at the Hotel Faust, Rockford, November 5, beginning at 1:30 p.m. and extending into the evening. Seven Chicago physicians will speak on coronary disease, hypertension, congenital heart deformity, kidney diseases, fracture problems and peptic ulcer.

Annual Conference on Exceptional Children.—The State Commission for Handicapped Children will sponsor the fourth annual Governor's Conference on Exceptional Children, to be held in Springfield, October 24, at the Leland Hotel. The conference will give an opportunity for first hand observation of methods in educational rehabilitation of handicapped children. Any one interested is invited to attend Speakers on the program include: Dr. Roland R. Cross, director, Illinois Department of Public Health, Springfield; Morton A. Seidenfeld, Ph.D., director of psychologic services, National Foundation for Infantile Paralysis, New York; Dr. Francis N. Brill, orthopedic surgeon of Springfield, and Howard F M. Miller, executive director, Illinois Commission for Handicapped Children, Chicago.

Chicago

Narcotic Violation.—Dr. Chester A. Price, 6345 University Avenue, Chicago, pleaded nolo contendere to an indictment charging violation of the Federal Narcotic Law and on September 4 was sentenced to a term of one year and one day.

Course in Electrocardiographic Interpretation.—A course in electrocardiographic interpretation for graduate physicians will be given at the Michael Reese Hospital Postgraduate School by Dr. Louis N. Katz, director of cardiovascular research. The class will meet each Wednesday from 7 to 9 p.m. for twelve weeks, beginning Feb. 17, 1948. Information may be obtained from the Office of the Dean, Michael Reese Hospital Postgraduate School.

University Course in Allergy.—A twelve month graduate course for clinical training and research in allergy is being offered by the University of Illinois allergy unit, a joint organization of the colleges of medicine and pharmacy, during the 1947-1948 school year. The course, open to six physicians, is designed to train specialists in allergy to help alleviate the shortage of allergists in the country. Though primarily clinical in scope, the course will include instruction in basic subjects related to allergy. The training and research program will be correlated with the university's allergy clinic. Registration was conducted October 1.

INDIANA

Honor Peru's Fifty-Year Physicians.—The Eleventh District Medical Association at a banquet September 17 in Peru honored Drs. Frank M. Lynn, David C. Ridenour and John E. Yarling, all of Peru, who have been in practice more than fifty years. Dr. Edgar F. Kiser, Indianapolis, was the principal speaker.

Testimonial Dinner to Dr. Sensenich.—A testimonial dinner in honor of Dr. Roscoe L. Sensenich, President-Elect of the American Medical Association, was held October 8 at the Indiana Club, South Bend, under the auspices of the St. Joseph County Medical Society, of which he is a member. Dr. Harold D. Pyle, president, presided. The after dinner address was given by Dr. Morris Fishbein, Chicago, Editor of THE JOURNAL, on medical statesmanship. Dr. Robert B. Sanderson, South Bend, presented a scroll to Dr. Sensenich. Other speakers were Dr. Floyd H. Romberger, president, Indiana State Medical Association, and Drs. Ernest R. Irons, Chicago, Secretary, and Elmer L. Henderson, Louisville, Ky., Chairman, Board of Trustees, American Medical Association.

Division of Venereal Disease Control.—Dr. Carl C. Kuehn, Indianapolis, formerly with the U. S. Public Health Service, has been placed in charge of venereal disease control activities of the state board of health, succeeding Dr George W. Bowman, Indianapolis, who is being loaned to the Indianapolis City Board of Health to help with venereal disease control and continue his work at the rapid treatment center. A graduate of Indiana University School of Medicine, Bloomington-Indianapolis, 1941, Dr. Kuehn attended the school of public health at the University of Michigan, Ann Arbor, and received his master's degree in public health last spring. Dr. C. Merle Bundy, Indianapolis, who for the last year has been acting director of the division of tuberculosis control on loan from the U. S. Public Health Service, has decided to resign from the Service and remain in the state. He is a graduate of the Indiana University School of Medicine, 1942.

KENTUCKY

State Medical Election and Awards.—At the annual meeting of the Kentucky State Medical Association September 29-October 2, Dr. J. Garland Sherrill, Louisville, received the association's Distinguished Service Medal for pioneering in the use of spinal anesthesia. Dr. J. Duffy Hancock, a member of the surgical faculty of the University of Louisville School of Medicine, Louisville, since 1923, from which school he graduated in 1921, received the E. M. Howard Medal for outstanding services as a physician and surgeon. The association installed Dr. Guy Aud, Louisville, as president and chose Dr. Charles A. Vance, Lexington, president-elect.

MICHIGAN

Typhoid at Saginaw Checked.—Typhoid fever, which 12 persons of Saginaw contracted in September, has been traced to a contaminated surface well, according to Dr. Frederick S. Leeder, Lansing, director of the state health department's bureau of epidemiology. The well apparently was contaminated by the discharge from a septic tank, and the carrier is being sought.

NEBRASKA

Creighton University Appointments.—Among the recent appointments to the faculty of the Creighton University School of Medicine, Omaha, are: assistant professor of bacteriology, James M. Beebe, Ph.D., Amherst, Mass.; assistant professors of physiology and pharmacology, Harold C. Struck, Ph.D., Chicago, and John Ferguson, Ph.D., Edmonton, Alberta, Canada; instructor in pathology, Dr. F. J. Campos, El Paso, Texas; assistants in surgery, Drs. Robert Fitzgibbons, William N. Hardman, both of Rochester, Minn., in charge of anesthesiology, and Harry H. McCarthy, Rochester, Minn.; assistant in medicine, Dr. John D. Hartigan, Rochester, Minn.; acting assistants in medicine, Drs. Richard J. Fangman and William O. Griffith, Council Bluffs, Iowa.

NEW YORK

Graduate Instruction for County Societies.—The Medical Society of the State of New York and the New York State Department of Health have arranged postgraduate instruction for the following county medical societies:

Clinton County, December 18 at 8 p. m. in the Champlain Valley Hospital Nurses Home, Plattsburg, on arthritis.

Jefferson County, November 13 at 8:30 p. m. at the Woodruff Hotel, Watertown, on medical aspects of the atomic bomb.

Appoint Director of Public Health Education.—Dr. Granville W. Larimore, New York, has been appointed director of the Office of Public Health Education, State Health Department, succeeding Mr. Bert R. Rickards, who served for thirty years (THE JOURNAL, Feb. 8, 1947, page 413). Dr. Larimore comes to the department from the American Cancer Society, where he had been educational director. He received his M.D. degree from Rush Medical College of the University of Chicago in 1936 and a Master of Public Health from Harvard University in 1942. During the War he served as chief of the army's health education branch, venereal disease control division.

New York City

Lectures for Laymen.—The New York Academy of Medicine will inaugurate the thirteenth series of its Lectures to the Laity with the Linsly R. Williams Memorial Lecture to be delivered October 30 at 8:30 p.m. by Lewis L. Strauss, New York, member of the U. S. Atomic Energy Commission, on "The Atom in Civil Life." On November 1 Dr. George R. Hargreaves, London, will speak on "Psychology of Leadership in War and Peace." The third lecture will be the ninety-eighth anniversary discourse of the New York Academy of Medicine, to be given by Sir Raphael Cilento, director of social activities, United Nations, Lake Success, N. Y., on "Food and Civilization."

Hospital Physicians Added to University Staff.—Eleven staff members of hospitals have received academic appointments at Columbia University College of Physicians and Surgeons as a result of the university's recently announced plan of affiliation with St. Luke's Hospital and Mary Imogene Bassett Hospital in Cooperstown (THE JOURNAL, Aug. 23, p. 1496). Dr. William F. MacFee, director of surgery at St. Luke's, was named clinical professor of surgery. Assistant professors of surgery are Drs. Benjamin Shore Jr. and Paul C. Morton; assistant clinical professors of medicine, Drs. John J. Keating, Albert C. Herring and Waldo B. Farnum. Staff members of the Goldwater Memorial Hospital, Welfare Island, who received appointments are Drs. Margaret Bevans and Robert W. Berliner. At the Mary Imogene Bassett Hospital Dr. James Bordley III was appointed associate clinical professor of medicine and Dr. Monroe A. McIver, associate clinical professor of surgery.

Cancer Detection Center Opened.—The first Cancer Prevention and Detection Center to be operated by the city health department has been opened at the Kips Bay-Yorkville Health Center, 411 East Sixty-Ninth Street. The center is a cooperative project sponsored by the city health department, the New York City Cancer Committee, Cornell University Medical College and the Strang Cancer Prevention Clinic of Memorial Hospital for the Treatment of Cancer and Allied Diseases. Operation of this center, planned by the health department as the first of several, will determine the most effective way to administer such programs. The New York City Cancer Committee will supply funds for professional personnel and special services for the first year of operation. The objective is to determine those persons who show symptoms for which diagnostic investigation is indicated. Treatment will not be given, and the detection service will be free. The center will be open to presumably well adults regardless of age. However, chief attention will be directed to persons over 40 years of age who are referred either by their physician or some medical service, or who may come without referral. Patients giving indications of any condition requiring medical attention will be referred to their physicians or to an appropriate clinic. Dr. Emerson Day of Cornell University Medical College will direct the cancer center. The health department is furnishing space, nursing and secretarial service and laboratory, dental and x-ray facilities. Staff members of the New York and Memorial hospitals will serve as consultants on special cases. An advisory committee of the sponsors will determine the general policies governing the clinic and select the medical personnel.

OHIO

Research on Radioactive Substances.—Under a $100,000 grant from the U. S. Atomic Energy Commission, Western Reserve University School of Medicine, Cleveland, will conduct research on the effects of radioactive substances and atomic energy on the body and on living cells. Dr. Hymer L. Friedell, professor of radiology, will direct the project and Dr. Arnold D. Welch, head, department of pharmacology, and Harland G. Wood, Ph.D., head, department of biochemistry, will be consultants. Paul A. Mattis, Sc.D., former professor of pharmacology, University of Florida School of Pharmacy, now at the Western Reserve School of Pharmacy, will direct the pharmacologic division of the project. Dr. Paul S. Lavik, assistant professor of biochemistry in the school of medicine, will study the effects of radioactive elements on enzymes and will supervise the work of the biochemical division. This research will be related to that conducted in several other institutions by the Atomic Energy Commission.

OREGON

Narcotic Violation.—Dr. Philip L. Newmyer, Portland, who was arrested May 9 and freed on $2,500 bond, was fined $5,000 in federal court when found guilty on six counts charging him with violating the Federal Narcotics Act by the sale of morphine tablets not in the course of his professional practice.

First Woman Elected President.—At the annual session of the Oregon State Medical Society in Portland, September 4-6, Dr. James C. Hayes, Medford, was installed as president. Dr. Leslie S. Kent, Eugene, was made president-elect; Dr. Werner E. Zeller, Portland, secretary, and Dr. Roger H. Keane, Portland, treasurer. Dr. Kent is the first woman to be chosen to head a state medical association. Dr. Kent, whose father and late husband were physicians, received her M.D. degree from Lincoln Medical College, Lincoln, 1917. In 1923 she began practice in Eugene. She is a former president of the Lane County Medical Society.

PENNSYLVANIA

State Medical Election.—At the annual session of the Medical Society of the State of Pennsylvania, September 15-18, Dr. Elmer Hess, Erie, was installed as president. Dr. Gibson C. Engel, Philadelphia, was chosen president-elect and Dr. Walter F. Donaldson, Pittsburgh, was reelected secretary-treasurer for the twenty-ninth consecutive year.

A Series of Graduate Courses.—The medical society of the state of Pennsylvania in cooperation with the medical schools of the state has arranged a series of graduate refresher courses to be held from October through May for general practitioners. Physicians may select one of the following centers: Allentown, Harriburg, Johnstown, Oil City, Wilkes-Barre or Williamsport. Each day of instruction will consist of eight hours. Emphasis will be placed on physiologic and pharmacologic points of view. Subjects to be covered are febrile diseases and endocrinology, cardiovascular diseases, neuropsychiatry, skeletal and muscular diseases, hematology and metabolic disorders, skin diseases and nutrition, urology, gynecology and obstetrics, respiratory diseases and anesthesiology, gastroenterology and modern therapy. The schedule is so arranged that a registrant who is unable to attend a particular session at his own center will be able to attend an identical session by traveling to a neighboring center on another date. The registration fee for members of the state society is $25; for nonmembers, $50. Information may be obtained from the Committee on Graduate Education, 230 State Street, Harrisburg.

WEST VIRGINIA

Pediatric Consultant.—Dr. Henrietta L. Marquis, Charleston, has been appointed as part time pediatric consultant to the division of maternal and child health. Before moving to Charleston in 1946, Dr. Marquis practiced pediatrics at Beckley. She has participated in the child health program of the state health department since 1935 and has served as a clinician at the Well-Child Conference in Beckley.

Hospital Advisory Board.—A seven member hospital-licensing advisory board has been appointed by the governor under the provisions of the hospital-licensing act passed by the legislature this year. The members will serve as consultants to the commissioner of health in issuing licenses to hospitals, sanatoriums, nursing homes and related institutions. The board is composed of John S. Alfriend, Charles Town; Charles Warner and C. R. Adams, Charleston; Dr. Hu C. Myers, Philippi; J. S. Turk, Wheeling; Sister M. Carola, Huntington, and James L. Foster, Bluefield.

WISCONSIN

Dr. Hirschboeck Appointed Dean.—Dr. John S. Hirschboeck, a member of the faculty of Marquette University School of Medicine, Milwaukee, since 1939, was appointed dean of the school September 28, to succeed the late Dr. Eben J. Cary. He was graduated from Marquette University School of Medicine in 1937, and in 1941 he received a degree of master of science, specializing in hematology. He served in the Navy from Dec. 14, 1941 to 1945.

Walter Zeit to Head of Department of Anatomy.—Walter Zeit, Ph.D., who has been an associate professor of anatomy at Marquette University School of Medicine, Milwaukee, since 1943, has been appointed director of the department to succeed the late Dr. Eben J. Carey. Dr. Zeit received his Ph.D. degree from Marquette University in 1939 and has been on the staff of the School of Medicine since 1921, having been an assistant in anatomy as an undergraduate.

GENERAL

Diploma Lost.—The diploma of Dr. Collins Fremont Hall, who graduated from Duke University School of Medicine, Durham, N. C., on June 6, 1938, has been lost. A duplicate is being issued by Duke to Dr. Hall.

International College Dedicates Home.—The United States Chapter of the International College of Surgeons dedicated its new home office at 1516 Lake Shore Drive, Chicago, at a program October 2. Dr. Raymond W. McNealy, Chicago, was general chairman of the program, and Dr. Herbert Acuff, Knoxville, Tenn., presided.

Central Society for Clinical Research.—The Society for Clinical Research will hold its twentieth annual meeting October 31-November 1 at the Drake Hotel, Chicago, under the presidency of Dr. Carl V. Moore, St. Louis. Numerous short papers will be presented by speakers from various sections of the country. There will not be exhibits or a social program.

Dr. Eusterman Receives Friedenwald Medal.—Dr. George B. Eusterman, Mayo Clinic, Rochester, Minn., was the recipient of the Friedenwald Medal given at the annual meeting of the American Gastro-Enterological Association in Atlantic City, N. J., in June for his outstanding work in gastroenterology. The July issue of *Gastroenterology* was dedicated to Dr. Eusterman.

Dr. Perkins Named Director of National Tuberculosis Association.—Dr. James E. Perkins, Albany, deputy commissioner, New York State Health Department, on Jan. 1, 1948 will succeed Dr. Kendall Emerson, New York, retired, as managing director of the National Tuberculosis Association. Dr. Perkins has been connected with the New York State Department of Health since 1934, when he joined the staff as an epidemiologist. He was last year appointed deputy commissioner. Dr. Emerson, managing director since 1928, has agreed to remain a consultant to the association.

Military Surgeons Meeting.—The Association of Military Surgeons of the United States will hold its annual convention at the Hotel Statler, Boston, November 13-15, under the presidency of Dr. Warren F. Draper, Washington. The program is made up of lectures on atomic energy, aviation medicine, preventive and environmental medicine; current personnel problems, psychiatry, research and development, dentistry and veterinary medicine, medicine and surgery, and panel discussions on the Army Nurse Corps, aviation medicine, dentistry and the Medical Service and Sanitary Corps.

Annual Meeting of Clinical Pathologists.—The annual meeting of the American Society of Clinical Pathologists will be held at the Drake Hotel, Chicago, October 27-30 with demonstrations at the University of Illinois College of Medicine and its Research and Educational Hospitals, Mt. Sinai Hospital and Hektoen Institute. The program includes a symposium on cardiolipin antigen and a seminar on Thursday on diseases of the kidney. There will be technical and scientific exhibits. At the banquet October 29 Dr. Edward L. Bortz, Philadelphia, President, American Medical Association, will speak on "Medicine's New Frontiers."

Prevalence of Poliomyelitis.—Reports of cases of poliomyelitis for the periods indicated have been received from the division of public health methods, U. S. Public Health Service:

Division and State	Week Ended			Total to		Total *	
	Oct. 11, 1947	Oct. 12, 1946	Median, 1942-1946	Oct. 11, 1947	Oct. 12, 1946	March 16-Oct. 11, 1947	March 17-Oct. 12, 1946
New England:							
Maine	2	3	[illegible]	37	26	34	26
New Hampshire	0	4	[illegible]	[illegible]	136	18	135
Vermont	0	6	[illegible]	28	37	20	33
Massachusetts	24	32	[illegible]	299	239	292	235
Rhode Island	4	9	[illegible]	134	75	133	75
Connecticut	8	17	[illegible]	127	82	124	74
Middle Atlantic:							
New York	61	77	[illegible]	958	1,102	922	1,069
New Jersey	9	13	14	242	201	236	195
Pennsylvania	30	12	[illegible]	372	217	358	205
East North Central:							
Ohio	88	14	14	1,119	582	1,109	567
Indiana	15	23	5	202	306	186	301
Illinois	29	139	48	730	2,060	708	2,052
Michigan	31	57	22	531	769	507	761
Wisconsin	15	67	13	178	1,011	154	998
West North Central:							
Minnesota	3	67	16	195	2,594	182	2,593
Iowa	12	39	18	142	475	134	466
Missouri	7	70	6	106	1,053	96	1,046
North Dakota	0	14	1	68	415	63	415
South Dakota	1	6	1	12	344	10	344
Nebraska	10	44	7	178†	503	171†	502
Kansas	4	71	11	84	846	66	842
South Atlantic:							
Delaware	0	4	2	126	26	126	26
Maryland	7	2	2	85	78	79	76
District of Columbia	4	1	1	18	23	16	22
Virginia	12	4	5	138	95	128	89
West Virginia	10	4	2	106	63	102	60
North Carolina	18	3	3	182	104	167	97
South Carolina	5	0	0	28†	19	27†	16
Georgia	2	1	1	67	136	60	128
Florida	8	11	3	85	523	60	474
East South Central:							
Kentucky	7	1	2	85	99	84	96
Tennessee	8	4	5	114	147	102	138
Alabama	2	1	1	46	358	33	355
Mississippi	1	12	1	43	271	26	254
West South Central:							
Arkansas	3	10	3	72	338	61	326
Louisiana	0	9	1	44	327	26	308
Oklahoma	0	17	11	43	331	32	325
Texas	0	21	20	155	846	130	818
Mountain:							
Montana	1	5	1	24	114	22	98
Idaho	50	4	1	195	35	185	35
Wyoming	1	2	2	16	112	13	111
Colorado	3	21	3	53	855	48	854
New Mexico	2	5	0	32	151	29	150
Arizona	0	4	1	28	103	25	100
Utah	0	3	3	10	118	5	112
Nevada	0	0	0	1	3	1	3
Pacific:							
Washington	10	36	14	118	396	110	363
Oregon	10	8	8	71	134	66	130
California	23	65	30	705	1,808	556	1,721
Total	540	1,042	...	8,454†	20,686†	7,842†	20,219
Median, 1942-1946	...	....	549	10,845		10,448	

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* Last two columns show reported incidence since approximate seasonal low week (week ended March 15 to 21).

† Figures changed by corrected reports.

Survey of Food and Nutrition Research.—A national survey of activities in the field of food and nutrition research is being undertaken by the Food and Nutrition Board of the National Research Council with the support of the Quartermaster Food and Container Institute of the armed forces. Leaders in the field have expressed a need for a central register of food and nutrition research to facilitate the coordination of peacetime research in relation to national security and public welfare. The register will serve as a basis for rapid mobilization of food research resources in event of national emergency. The survey will cover the chemical, physiologic, microbiologic, technologic, psychologic and basic economic studies of nutrition research. Correlation of such studies with regard to health, acceptability, stability, utility and economy of food will be made. Subject listings of research and progress pertaining to foods and nutrition are being obtained from directors of research in industry, universities, government and other agencies, foundations, public trusts and industry. In addition, a roster of personnel engaged in research is being developed in collaboration with the Office of Scientific Research of the Research Council. Charles G. King, Ph.D., Scarsdale, N. Y., scientific director of the Nutrition Foundation, is chairman of the committee on survey of food and nutrition research, which will supervise the project and make reports. Information may be obtained from the office of the Food and Nutrition Board of the National Research Council, 2101 Constitution Avenue, Washington, D. C.

AUSTRALIA

Flying Doctor Service.—From eight bases throughout Australia the flying doctor service brings medical aid to families and sheep ranchers in Australia's "outback." Each base, according to the Associated Press, has a physician, pilot and radio operator, and a two way radio and twin engined airplane fitted out as an ambulance. People on isolated farms contact the base with a "pedal wireless," which can be installed in homes for $275. Medical advice for mild illnesses is given from the base by radio with instructions for the use of a medical kit with which every home is equipped. If a patient needs hospital attention he is flown back to the base in the aerial ambulance. The service is maintained by government subsidy, private donations and a voluntary contribution scheme by which settlers pay a yearly subscription. Nonsubscribers receive free medical advice by radio but are expected to pay for a doctor's call. Charges are based on the average carrying capacity of the property and range from $16 for property with three thousand sheep to $65 for property with seventeen thousand sheep. Dr. John Flynn, superintendent of the Presbyterian Inland Mission, began the service twenty-six years ago with one base at Cloncurry in North-West Queensland.

EGYPT

Cholera in Egypt.—According to the Associated Press, the death toll in the three week cholera epidemic in Egypt had reached 2,128 by October 19. On the preceding day the health ministry listed 247 deaths in the twenty-four hours ending at 8 a. m. A specially equipped plane of the United States air force arrived in Cairo October 19 from Frankfort, Germany, with 100,000 gallons of DDT spraying mixture to combat flies spreading the disease. It is expected that the plane will be used to reach distant areas while smaller aircraft continue to spray Cairo and the nearby region.

Marriages

Truman G. Schnabel Jr., Philadelphia, to Miss Mary Florence Hyatt of Washington, Ind., in New York, September 13.

George Louis Armbrecht to Miss Eleanor Lincoln Flint, both of Wheeling, W. Va., September 30.

Richard Lord I[illegible]ey, New York, to Miss Mary Catesby Jones of Petersham, Mass., September 6.

Kenneth Shiler Shepard, Washington, D. C., to Miss Helen Reis of Evanston, Ill., recently.

John M. Keller, Philadelphia, to Miss Ruth Clare Stranford of Ashland, N. J., September 26.

Frances A. Swan, Livonia, N. Y., to Mr. Walter H.. Lieneck of Brooklyn, August 16.

John Horton Doane Jr., Sayre, Pa., to Miss Hilda Mann Hogg of Towanda, August 23.

Anson G. Hurley to Miss Betty Pheneger, both of Muncie, Ind., September 6.

Deaths

Barney James Hein ⊕ Toledo, Ohio; born in Toledo on April 23, 1889; Toledo Medical College, 1912; specialist certified by the American Board of Orthopaedic Surgery; member of the House of Delegates of the American Medical Association since 1939; member of the Clinical Orthopaedic Society and the American Academy of Orthopaedic Surgeons; fellow of the American College of Surgeons; president of the Ohio State Medical Association, 1938-1939, and for three terms served as councilor of the Fourth District, in which position he was active on various committees; chairman of the committee on public relations and economics since 1940; a member and formerly chairman of the committee on industrial health and workmen's compensation; member of the board of directors of Ohio Medical Indemnity, Inc., the association's prepayment medical care plan; president of the Academy of Medicine of Toledo and Lucas County in 1930; during World War I served overseas in charge of the orthopedic department of Evacuation Hospital number 5 and saw active service in Aisne-Marne, Oise-Aisne, St. Mihiel, Meuse, Argonne and Ypres-Lys engagements; following duty at Orthopedic Base Hospitals number 9 and 11 was discharged as a captain in March 1919; director of the orthopedic staff at St. Vincent's Hospital and member of the orthopedic staffs at Toledo, Flower, Riverside and Lucas County General hospitals; served as trustee for the Toledo Newsboy's Association (later the Boys' Club of Toledo), the Toledo Hospitalization Association, Toledo Society for Crippled Children, Toledo Chamber of Commerce and the Toledo Medical College Fund of Toledo University; served on the advisory board of the University of Toledo's athletic department; charter member and past president of the Lion's Club of Toledo; died August 17, aged 58.

James A. Abney, Brownwood, Texas; Galveston Medical College, 1871; Confederate veteran; died July 29, aged 100, of senility.

John Pelham Bates, Greenwood, Miss.; Vanderbilt University School of Medicine, Nashville, Tenn., 1896; on the staff of the Greenwood Leflore Hospital, where he died August 8, aged 79, of myocarditis.

Franklin Carlisle Bivings, Atlanta, Ga.; University of Illinois College of Medicine, Chicago, 1916; served during World War I; on the staff of St. Joseph's Infirmary, where he died August 7, aged 68, of coronary heart disease.

Frank Brostrom ⊕ New Orleans; Jefferson Medical College of Philadelphia, 1923; affiliated with Touro Infirmary and the New Orleans Hospital and Dispensary for Women and Children; died July 31, aged 53, of coronary thrombosis.

Henry M. Brown, Roswell, N. M.; Chicago Medical College, 1892; died in Colorado Springs July 31, aged 80, of coronary thrombosis.

Henry Campbell, Graham, Mo.; Kentucky University Medical Department, Louisville, 1903; died in St. Francis Hospital, Maryville, July 29, aged 67, of cerebral hemorrhage.

Lewis Richard Carr, Wayne, Ohio; Ohio State University College of Medicine, Columbus, 1916; past president of the Academy of Medicine of Toledo and Lucas County; served during World War I; formerly on the staff of the Flower Hospital in Toledo; member of the Clinical Orthopaedic Society and the American Academy of Orthopaedic Surgeons; died July 31, aged 56, of cerebral hemorrhage.

Frank Elijah Chapman, Montgomery, Ala.: Louisiana State University School of Medicine, New Orleans, 1937; member of the American Medical Association; formerly affiliated with the Pines Sanatorium in Shreveport, La.; served with the division of tuberculosis control of the state department of public health; died in Grove Hill August 19, aged 34, of tuberculosis.

William Stewart Chapman, Jackson, Ala.; Emory University School of Medicine, Atlanta, Ga., 1924; member of the American Medical Association; past president of the Clarke County Medical Society; councilor of the Medical Association of the State of Alabama; died July 22, aged 50, of coronary occlusion.

George William Cline, Muncie, Ind.; Indiana University School of Medicine, Indianapolis, 1941; member of the American Medical Association; interned at the Eloise Hospital and Infirmary in Eloise, Mich.; served a residency at the Logansport State Hospital in Logansport, Ind.; died in the Union City Hospital in Union City, July 6, aged 33, of cerebral hemorrhage.

Manning E. Cohn, Cleveland Heights, Ohio; Ohio State University College of Medicine, Columbus, 1933; member of the American Medical Association; served during World War II; died in the Mount Sinai Hospital in Cleveland July 11, aged 39, of coronary thrombosis.

James Joseph Collins, Woodbridge, N. J.; Long Island College Hospital, Brooklyn, 1907; died June 19, aged 70, of hypertension, diabetes mellitus and a fractured femur received in a fall.

Francis Joseph S. Conlan ⊕ San Francisco; Rush Medical College, Chicago, 1899; member of the Pacific Coast Oto-Ophthalmological Society; fellow of the American College of Surgeons; on the staff of St. Mary's Hospital, where he died July 17, aged 73, of coronary heart disease.

Paul James Connor ⊕ Denver; University of Texas School of Medicine, Galveston, 1912; specialist certified by the American Board of Internal Medicine; fellow of the American College of Physicians; past president of the state board of health; served during World War I and as president of the staff of the Presbyterian Hospital; affiliated with St. Luke's Hospital, where he died July 26, aged 60, of heart disease.

Charles Eli Cottingham, Indianapolis; Medical College of Indiana, Indianapolis, 1895; member of the American Medical Association; served on the faculty of the Indiana University School of Medicine and on the staffs of the Richmond (Ind.) State Hospital, James Whitcomb Riley, City, St. Vincent's and Methodist hospitals; died July 23, aged 78, of coronary thrombosis.

William Allen Cracraft Jr., Wheeling, W. Va.; University of Virginia Department of Medicine, Charlottesville, 1901; member of the American Medical Association; served in France during World War I; on the staff of the Ohio Valley General Hospital, where he died July 10, aged 69, of hypertensive heart disease.

Herbert William Emerson, Ann Arbor, Mich.; University of Michigan Medical School, Ann Arbor, 1915; member of the American Medical Association; served on the faculty of his alma mater; died in the Hamilton General Hospital, Hamilton, Ontario, Canada, June 21, aged 66, of cerebral hemorrhage.

Charles Fox Gardiner, Colorado Springs, Colo.; Bellevue Hospital Medical College, New York, 1882; member of the American Medical Association and the American Clinical and Climatological Association; affiliated with the Beth-El Hospital; author of "Doctor at Timberline"; died July 31, aged 89, of myocarditis.

Harold Eugene Gibson ⊕ Kenton, Ohio; Eclectic Medical College, Cincinnati, 1915; served in France during World War I; past president of the Hardin County Medical Society; died suddenly, July 2, aged 54, of coronary occlusion.

Florence Gilman ⊕ Poughkeepsie, N. Y.; Tufts College Medical School, Boston, 1902; member of the Massachusetts Medical Society; at various times affiliated with Smith College, Northampton, Mass., Vassar College, Poughkeepsie, and Radcliffe College, Cambridge, Mass.; died in Meredith, N. H., July 31, aged 69, of coronary occlusion.

Ralph Warren Goss, Litchfield, Me.; Medical School of Maine, Portland, 1904; served as a member of the school board; died July 16, aged 68, of mesenteric thrombosis.

Henry Matthew Grady, Dedham, Mass.; Harvard Medical School, Boston, 1905; member of the American Medical Association; for many years physician for the welfare board; died July 30, aged 72, of cirrhosis of the liver.

James Graybeal, Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1907; member of the American Medical Association; formerly on the staff of the Englewood Hospital; died July 23, aged 73, of cerebral thrombosis and carcinoma of the prostate.

Luther Hays, Cullman, Ala.; Chattanooga (Tenn.) Medical College, 1900; also a graduate in pharmacy; member of the American Medical Association; veteran of the Spanish-American War; on the staff of Cullman Hospital; died July 7, aged 76, of carcinoma of the colon.

Robert Reeves Hays ⊕ Akron, Ohio; Jefferson Medical College of Philadelphia, 1922; specialist certified by the American Board of Psychiatry and Neurology; member of the American Psychiatric Association; at one time affiliated with the Pennhurst State Hospital in Pennhurst, Pa., Blair County Hospital for Mental Diseases in Holidaysburg, Pa., and the Danville (Pa.) State Hospital; served on the staff of St. Thomas Hospital; died in Cleveland August 21, aged 48, of coronary occlusion.

Thomas Francis Hennessey ⊕ Swampscott, Mass.; Tufts College Medical School, Boston, 1911; at one time practiced in Lynn, where he was for many years affiliated with the Lynn Isolation and Union hospitals; examiner of the draft during World War I; died July 21, aged 60, of coronary thrombosis.

Paul Stanley Hill, Saco, Maine; George Washington University School of Medicine, Washington, D. C., 1906; member of the American Medical Association, consultant at the Webber Hospital and co-owner of the Trull Hospital in Biddeford; died at his summer home in Biddeford Pool, July 26, aged 66, of coronary thrombosis.

Harry Conrad Himmelman, Chicago; Chicago College of Medicine and Surgery, 1912; on the staff of the Lutheran Deaconess Hospital, where he died July 20, aged 61, of coronary thrombosis.

Farish Clay Holden, Atlanta, Ga.; University of Georgia School of Medicine, Augusta, 1928; member of the American Medical Association; served as a member of the state board of medical examiners; medical consultant for the Veterans Administration; first lieutenant, medical reserve corps, U. S. Army, not on active duty; on the staffs of the Crawford W. Long and the Georgia Baptist hospitals; died in the Veterans Administration Hospital July 15, aged 47, of circulatory failure and chronic cholecystitis.

Stanley Hall Holland ⊕ McKeesport, Pa.; College of Physicians and Surgeons, Baltimore, 1914; president of the McKeesport Academy of Medicine; affiliated with the staff of the McKeesport Hospital, where he died July 22, aged 59, of coronary occlusion.

Alf Justin Holm ⊕ Chicago; Jefferson Medical College of Philadelphia, 1924; specialist certified by the American Board of Urology; fellow of the American College of Surgeons; served during World War II; clinical instructor in urology, department of surgery, University of Illinois College of Medicine; affiliated with the Alexian Brothers Hospital and the Ravenswood Hospital, where he died July 31, aged 49, of coronary thrombosis.

Lewis Wade Hood, Biloxi, Miss.; Mississippi Medical College, Meriden, 1911; past president of the school board; also a druggist; died July 24, aged 63, of heart disease.

Claude Gibson Hooten, Lynchburg, Va.; Bennett Medical College, Chicago, 1915; member of the American Medical Association; served during World War I; for many years medical examiner for the Norfolk and Western Railway; died in the Virginia Baptist Hospital July 25, aged 56, of heart disease.

Edward T. Hornback ⊕ Hannibal, Mo.; Missouri Medical College, St. Louis, 1891; specialist certified by the American Board of Ophthalmology; on the staffs of St. Elizabeth's Hospital and the Levering Hospital, where he died July 15, aged 83, of coronary thrombosis.

Edmund Newell Huff ⊕ South Pasadena, Calif.; Hahnemann Medical College and Hospital of Philadelphia, 1900; past president of the Bergen County (N. J.) Medical Society; at one time practiced in Englewood, N. J., where he was affiliated with the Englewood Hospital; at one time on the staff of the Holy Name Hospital at Teaneck, N. J.; on the staff of the Huntington Memorial Hospital in Pasadena; died July 3, aged 68, of aortic aneurysm and chronic hypertension.

Charles Henry Ingram, Fresno, Calif.; Cooper Medical College, San Francisco, 1903; member of the American Medical Association; on the staffs of St. Agnes Hospital and the Fresno Community Hospital, where he died July 28, aged 72, of cerebral thrombosis and cerebral hemorrhage.

Henry Janoff ⊕ Trenton, N. J.; Temple University School of Medicine, Philadelphia, 1934; affiliated with St. Francis Hospital; died in the F. W. Donnelly Memorial Hospital July 11, aged 39, of pulmonary tuberculosis.

Francis Arthur Jones ⊕ Lansing, Mich.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1903; fellow of the American College of Surgeons; on the staffs of Sparrow Hospital and St. Lawrence Hospital, where he died July 5, aged 73, of cerebral hemorrhage.

Henry Nathan Kehres ⊕ Bryn Mawr, Pa.; Jefferson Medical College of Philadelphia, 1932; served overseas during World War I; on the staff of Bryn Mawr Hospital, where he died July 17, aged 49, of coronary occlusion.

John Leo Kelliher, Detroit; Chicago College of Medicine and Surgery, 1912; served in France during World War I; associated with the judiciary board of the Veterans Administration; served on the staff of the Veterans Hospital in Dearborn, Mich.; died in the Charles Godwin Jennings Hospital July 14, aged 60; of peritonitis following rupture of a diverticulum of the colon.

Raymond Alexander Kinloch ⊕ Springfield, Mass.; University of Vermont College of Medicine, Burlington, 1903; member of the New England Obstetrical and Gynecological Society; on the staffs of the Wesson Memorial and Wesson Maternity hospitals; died July 5, aged 72, of heart disease.

Allan Oscar Kisner, Bethlehem, Pa.; College of Physicians and Surgeons, Baltimore, 1896; on the auxiliary staff of St. Luke's Hospital; died July 5, aged 82, of arteriosclerosis and bronchopneumonia.

Claude Ross Laird ⊕ Ingleside, Neb.; Creighton University School of Medicine, Omaha, 1913; member of the American Psychiatric Association; served during World War I; for many years on the staff of the Hastings State Hospital; died in the Soldiers' and Sailors' Home in Grand Island, July 5, aged 66, of uremia and heart disease.

Edward Nathaniel Lindquist ⊕ Culver City, Calif.; College of Medical Evangelists, Los Angeles, 1933; diplomate of the National Board of Medical Examiners; co-owner of the Community Hospital; died July 5, aged 42, in an airplane accident.

Thomas Russell Littlejohn, Sumter, S. C.; Medical College of South Carolina, Charleston, 1910; member of the American Medical Association; president of the Sumter County Medical Society; served during World War I; on the staff of the Tuomey Hospital, where he died July 26, aged 58, of cerebral hemorrhage.

Thomas E. Livingston, Portales, N. Mex.; College of Physicians and Surgeons, Keokuk, Iowa, 1887; died July 4, aged 86, of cerebral hemorrhage.

Herman Meyer Lynch ⊕ West Bend, Wis.; Northwestern University Medical School, Chicago, 1908; health officer; served during World War I; member of the county selective service board during World War II; on the courtesy staff at St. Joseph's Hospital in Milwaukee and the regular staff at St. Joseph's Hospital in West Bend, where he died July 8, aged 63, of aneurysm and rupture of the aorta.

Gustavus T. Lyon, Roswell, Ga.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1898; member of the American Medical Association; formerly a member of the state board of medical examiners; on the staff of the Crawford W. Long Memorial Hospital in Atlanta; died July 1, aged 75, of arteriosclerotic heart disease and nephritis.

John J. McGarrell, Baltimore; University of Maryland School of Medicine, Baltimore, 1908; died May 12, aged 64, of cerebral hemorrhage and hypertension.

Edward Louis Miller, Picher, Okla.; University Medical College of Kansas City, Mo., 1911; served during World War I; affiliated with the Picher Hospital; died July 18, aged 62, of angina pectoris.

Albert Crombie Nixon ⊕ Los Angeles; Western University Faculty of Medicine, London, Ontario, Canada, 1914; on the staff of the Children's Hospital; died June 15, aged 59, of cerebral hemorrhage and hypertension.

Joseph Tilford Scott ⊕ New Orleans; Medical Department of Tulane University of Louisiana, New Orleans, 1894; for many years affiliated with the U. S. Public Health Service; on the staffs of the Mercy Hospital and the Touro Infirmary; died July 5, aged 77, of coronary occlusion.

Charles E. Sharp, Elgin, Ill.; Chicago Homeopathic Medical College, 1895; Harvey Medical College, Chicago, 1900; died in the Sherman Hospital July 29, aged 86, of carcinoma of the stomach.

Wilbur S. Slaughter, Jonestown, Miss.; Memphis (Tenn.) Hospital Medical College, 1904; member of the American Medical Association; died July 14, aged 66, of heart disease.

Jane Gray Stone, Boston; Tufts College Medical School, Boston, 1911; died in the Massachusetts General Hospital May 6, aged 73, of pulmonary embolism.

Elma Janes Townsend, Madison, Wis.; Woman's Medical College of Baltimore, 1899; died in Maywood, Ill., July 2, aged 81, of coronary heart disease.

Harvey Clinton Upchurch, Dover, N. J.; College of Physicians and Surgeons, medical department of Columbia College, New York, 1893; died in the General Hospital July 21, aged 77, of coronary occlusion and hypertension.

Walter Edward Zielinski, Buffalo; University of Buffalo School of Medicine, 1917; member of the American Medical Association; served during World War I; bacteriologist for the city health department; died June 14, aged 57, of aortic insufficiency.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Sept. 20, 1947.

Vitamin D in Cutaneous Tuberculosis

In the section of dermatology Dr. J. Charpy (France) gave the results of vitamin D treatment in cutaneous tuberculosis; he introduced this treatment seven years ago. He now gives an adult 15 mg. of vitamin D in alcoholic solution twice a week for four weeks. He follows this with the same dose weekly for periods ranging from two months to two years. This treatment should be accompanied by a diet containing 1½ pints (670 cc.) of milk a day, with plenty of meat, fruit and vegetables. Fats should be taken sparingly and the salt intake much reduced, being omitted completely three days a week. The patient should take no alcohol or whole meal bread and should live in the open air. The good effects of treatment should be evident on the fifteenth day. If there was not improvement by then, failure of absorption must be suspected, or failure of tissue permeability, because of too much salt in the tissues. In successful cases there was no doubt about clinical cure; anatomic cure was more doubtful. If the treatment was pushed toxic symptoms were produced, which might culminate in acute nephritis.

Dr. G. B. Dowling (London) described his results from this treatment regimen, which he had adopted before he knew of Charpy's work. He gave doses of 150,000 units of vitamin D a day. He treated 39 patients to the end of 1945. Of these, 32 have been fully assessed; 18 are free from lupus and 9 improved, while 5 show no change. Since March 1946 he has treated 33 cases of cutaneous tuberculosis in adults and 11 in children. The adults had the disease an average of twenty years. Twenty-eight patients were discharged as free from lupus, but of these ten showed relapses, which responded to further treatment. In the early weeks of treatment the adult patients became worse and then began to improve. In one or two cases treatment with calciferol was followed by activation of a tuberculous focus in the lung. Dr. Dowling noted that Charpy reported nearly 100 per cent successes. His own results were not equal to this but were striking. On the other hand, others reported poor results, and it was hard to account for the great discrepancies.

Penicillin

At the opening session Sir Archibald Fleming, the discoverer of penicillin, discussed this substance. It was the first successful antibiotic and set a high standard which no other antibiotic had yet reached. He discovered it by accident in 1928, while studying the staphylococcus. He forgot to put the lid on one culture plate, which became contaminated by an air-borne mold. Until recently all the penicillin in the world was made from the pure cultures grown from this contaminant. Following the observation that the mold produced lysis of the staphylococci growing near it, experiment showed that it had a selective action on some bacteria. When the mold was grown in a fluid medium, the fluid underneath contained a differential antiseptic, which was named penicillin. Other molds tested did not have this property. It was found that solutions of penicillin would diffuse through a much greater thickness of agar than could the old fashioned antiseptics and, in contrast with all other antiseptics then known, would kill staphylococci without harming leukocytes. In those early days penicillin was extremely impure—the best batches had a potency of only 1.5 units per cubic centimeter. Research in the United States has produced strains with a far greater yield.

Fleming has urged that penicillin be given only when the infecting organism is sensitive to it. The main objection to oil and beeswax mixtures—that they solidify on cooling—has been overcome. But prolonged action can equally well be obtained by injecting large doses of an aqueous solution. The most dramatic success of penicillin has been against gonorrhea. It is the only drug that allows a patient to have an attack twice a week! Indiscriminate use of penicillin is to be deprecated, because it is possible, though not easy, to render a sensitive organism resistant. The chairman, Lord Moran, said that as regards syphilis it is not known what the remote results of treatment will be.

Professor R. V. Christie submittd a report on the results of treatment with penicillin in 269 cases of infective endocarditis at the fourteen centers set up by the Medical Research Council. A dosage of 500,000 units a day was the most successful. It was a mystery why some patients did not respond though their infecting organism was no less sensitive than that of others who recovered. If a patient relapsed after one course he was unlikely to respond to a second. Most relapses occurred within twenty days but might arise after a year of health. Foci of infection should always be attended to. After a follow-up of at least a year Professor Christie had determined that in 95 per cent of the cases the infection could be controlled, but 39 per cent of the patients would die later. Heart failure was the major cause of death, accounting for 56 per cent of the fatalities, uremia for 6 per cent, emboli for 11 per cent, hemorrhage for 8 per cent and uncertain causes for 19 per cent. The risk of complications was more serious than the risk of not responding to penicillin therapy. The most significant points in prognosis were the degree of heart failure and the state of nutrition. With severe cardiac failure the outlook was practically hopeless, and the death rate among emaciated patients was 87.5 per cent. A sufficient dietary of protein was therefore essential.

PARIS

(From Our Regular Correspondent)

Sept. 5, 1947.

Vitamin D_2 in the Treatment of Lupus Vulgaris

Vitamin D_2 in an alcoholic solution, given per os, is claimed to cure completely and definitely tuberculosis of the skin. As stated by Professor Robert Debré at the scientific assembly of the Centennial Celebration of the American Medical Association, signs of intolerance through too strong doses have been seen. At one of the recent meetings of the National Academy of Medicine J. Charpy (Dijon) has explained the results of his research on the process of action of vitamin D_2; he thinks that a certain amount of vitamin D_2 increases the activity of intestinal phosphatases and that with stronger doses there occurred, moreover, activation of other phosphatases in the kidneys and in the bones, which produced intoxication.

He relies on two groups of facts:

1. Magnesium, an activator of alkaline phosphatases, supplements the therapeutic effect of vitamin D_2 without diminishing the margin of tolerance, if administered orally in the form of magnesium chloride (1½ Gm.) a little while before the vitamin D_2 is taken. However, intravenous magnesium sulfate (1½ Gm.) increases the effect of vitamin D_2 but diminishes the margin of tolerance. Why this difference of action? In the case of oral magnesium chloride the amount of magnesium in the blood does not sensibly vary and only the intestinal phosphatases are activated; by the intravenous administration of magnesium sulfate the renal and osseous phosphatases are stimulated at the same time.

2. Cysteine is a strong inhibitor of the phosphatasic action; Charpy and P. Pichat have observed that the daily injection of 0.001 Gm. of cysteine suppresses the therapeutic effect of a large dose of vitamin D_2 given orally in an alcoholic solution and, at the same time, the accidents due to intolerance. Therapeutic activity and intoxication are, then, two effects with a single cause. As a consequence, Charpy thinks that vitamin

D_2 reacts on the lupus not by itself but through products of the hydrolysis of the intestinal phosphastase transferred to skin by means of the circulation. The author has also reported a clinical experimental observation, in which an open tuberculous lesion, rich in Koch's bacilli, has been sterilized through a complex treatment consisting of (*a*) oral magnesium chloride, vitamins D_2, B_1, B_2 and C (ascorbic acid), phosphoric acid and nicotinamide and (*b*) direct contact of muscular adenylic acid.

New Books on Pulmonary Tuberculosis

Two remarkable books by G. Canetti, laboratory chief at the Cochin Hospital and assistant at the Pasteur Institute, have been published by Ernest Flammarion, 20 Rue du Vaugirard, Paris, (under the guidance of Professor Pasteur Vallery-Radot and Professor Agrégé J. Hamburger) in the collection of the Pasteur Institute.

"Koch's Bacillus in the Tuberculous Lesion of the Lung" sets forth the anatomicohistobacteriologic and clinical research on 1,500 cases for seven years. The author has examined the abundance and the rarity of the tubercle bacillus according to the various stages of tuberculosis He has found in histologic sections an average of 13 bacilli in one hundred fields in fibrinous alveolitis; only 6 in one hundred fields in solid caseation, but up to 150,000 in one hundred fields of caseation in process of softening. In the cavities (in the internal necrotic zone) there is an average of 8,000 in one hundred fields. The causes of these variations are unknown. Canetti thinks that they are probably ascribable to changes in the local conditions, which create a medium sometimes favorable, sometimes unfavorable to bacillary development.

"Tuberculous Allergy in Man" sets forth the results of research on 4,500 cases. Against the broader definition of allergy by Rist and others, the author adopts a restricted definition of allergy as a hypersensitivity which appears in the organism when first infected. He studies it in latent tuberculosis, in osteoarticular and cutaneous tuberculosis. He also studies the mechanism of allergy, which, according to him, does not yield any information which could be of profit for the diagnosis or the prognosis; its value is questionable. It is at the same time useful and noxious on account of the strong reaction which has an influence on the trend of phthisis. The primary role, as regards protection, belongs, according to the author, to the natural resistance of the organism. The evolvement of a precise test rendering possible the detection of subjects resistant to tuberculosis is of primary importance. The author believes it possible that subjects whose tuberculin reactions are negative after having been positive are endowed with a strong natural power of resistance contributing to the rapid sterilization of latent lesions.

Adnexitis

On the agenda was adnexitis. J. Dalsace emphasized the role of hysterosalpingography and of insufflations in the diagnosis and treatment of salpingitis. He insisted on the association of those two processes with conservative surgery of the oviducts. Y. Canel and P. Neumand demonstrated, on observation of thousands of cases, that 85 per cent of patients respond successfully to hydromineral treatment. R. Bougarel and H. Ezes reported 8 cases of salpingitis due to intestinal parasitism. Arnaldo de Moraes and João Bruno Lobo (Rio de Janeiro, Brazil) reported 68 cases of adnexitis treated with four consecutive applications (50 r each) of roentgen therapy. In 42 cases (64 per cent) they obtained extremely favorable results, in 16 (24 per cent) indifferent ones; 8 cases (12 per cent) have been failures. J. Delmas and Y. Andreani used with success local penicillin therapy associated with a *véhicule retard* and added vitamin H (biotin), which renders it effective against Escherichia coli. In a series of abscesses of the breast, they obtained spectacular results by the local use of penicillin and avoided surgical operation. The same authors reported 90 patients (50 post abortum and 40 post partum) prophylactically treated with great success by direct introduction into the uterus after obstetric proceedings (such as curettage) of an average of 5 Gm. (ten tablets) of sulfanilamide. The Congress has expressed several wishes, which have been forwarded to the public authorities: (1) that the Social Security Organization recognize adnexitis as a disease of long duration; (2) the creation by the Faculty of Medicine of a Gynecologic Certificate for the specialists of this branch, and (3) the inclusion of a sperm examination among other laboratory tests in the prenuptial examination because of the increase of male sterility (35 per cent).

Eleventh Congress of French Gynecologic Society

This Congress, at which twelve nations were represented, took place at Châtelguyon, May 31-June 3, 1947. The opening speech was delivered by the honorary president, Dr. J. C. Rubin of New York, representing the American Gynecological Society. He said among other things that: "Medicine is democracy in action; it knows of no barrier, no secret formula; the same biologic laws apply to kings as to ordinary citizens, to whites and Negroes, to aristocrats and laborers. True Medicine knows of no hatred. Nature in its different kingdoms offers a striking evidence of unity in diversity. Science, Democracy and Medicine are an absolute whole."

BUENOS AIRES

(From Our Regular Correspondent)

Sept. 10, 1947.

Transthoracic Injection of Streptomycin

According to a communication to the National Academy of Medicine, Drs. M. R. Castex, E. L. Capdehourat and C. Rechniewski injected streptomycin directly into the thorax in 2 cases of chronic pulmonary suppuration (a more precise characterization of the disease is not given) in which every other therapeutic procedure, including nebulization of sulfonamide drugs and penicillin, had been without success. They chose the transthoracic route to administer the small quantity of streptomycin available.

The sputum of the first patient showed, before this treatment, a flora particularly rich in gram-negative organisms (Klebsiella pneumoniae and coliform bacilli). After the transthoracic injections of streptomycin the bacterial flora diminished in quantity and quality. Both the aforementioned bacilli disappeared after the fifth injection, but after the eighth injection some gram-negative organisms reappeared (although in a small number) and did not disappear again until the end of the treatment (acquired resistance?). The presence of an effective amount of streptomycin in the sputum could be proved. The quantity of sputum diminished from 85 cc. per day to 25 cc. after the sixth injection, coincident with the disappearance of the gram-negative bacilli, but later on increased again.

In the second case also previous intrapulmonary injections (see The Journal, Oct. 5, 1946, p. 303) of sulfonamide compounds, neoarsphenamine and other agents—two hundred injections in all—had had a transitory effect (if any). With streptomycin therapy the number of organisms diminished considerably following the third injection and remained so until the end of treatment. The gram-negative bacilli disappeared at the same time but reappeared in a much lower concentration after the seventh injection and remained so until the treatment was terminated.

From their observations the authors conclude that the action of streptomycin is only transitory and bacteriostatic but not bactericidal. After the treatment had been terminated, the bacterial flora reappeared. The pyogenic process of the lung had not been cured, although the streptomycin had been diffused efficiently in the morbid focus. The injection of 1 Gm. of the drug is adequate for twenty-four hours, while for other routes of injection greater amounts are necessary. This circumstance seems of importance also with respect to disagreeable side reactions provoked by greater quantities of the substance. The frequency of the injections depends on the clinical and bacteriologic data obtained. According to the observations in the 2 cases mentioned, one transthoracic injection per day is sufficient (contrary to the need for more intramuscular and intravenous applications). The transthoracic injections should be continued after the gram-negative bacteria have disappeared, to make the cure certain. If during treatment the gram-negative bacteria reappear, the dose of streptomycin should be increased, because the reappearance indicates a certain degree of resistance to the drug. In both the observed cases the application of streptomycin could not be continued according to these rules due to the lack of the drug.

Intra-Articular Administration of Penicillin

Occasionally cases of acute articular processes are seen which affect only one or two articulations but these with much intensity (and not many joints in a more superficial degree). It is the form which Chauffard designated rheumatic pseudophlegmon. According to a communication of Dr. Guido Costa Bertani to the Society of Internal Medicine of Buenos Aires it is characteristic for this condition to be resistant to any usual form of treatment. A quick therapeutic success, however, is necessary to overcome the great danger of cartilaginous destruction. Sulfonamide compounds are without effect; a gold preparation is somewhat better but not always possible to administer, due to the sensitivity of many patients to this substance, and sometimes dangerous. Penicillin given intramuscularly or intravenously also has little effect (if any). Therefore Dr. Costa Bertani tried the intra-articular administration of penicillin directly into the affected joint. After obtaining a good result in the first patient (who was absolutely resistant to any other treatment) with only two intra-articular injections, this method has been tried in more cases (4 of which are described in extenso) with complete and immediate success. The dosage of penicillin varies between 5,000 and 20,000 Oxford units (10,000 per cubic centimeter). It is supposed that the rapid improvement is exclusively due to the intra-articular administration of penicillin.

Cardiology as a Specialty

The Faculty of Medicine of Buenos Aires has created the title of Cardiologist. To be qualified as such the candidates must be an M.D. at least two years and attend a special instruction course of two years' duration, practical as well as theoretic, which includes pathologic anatomy, physiopathology, semiology, pharmacology and therapeutics, radiology, electrocardiology and cardiologic clinic. The number of participants is limited; they pay each year 100 pesos for matriculation and 720 pesos for the training. Seventy per cent of this amount is distributed among the teachers, who must be recognized specialists elected by the director of the course, who himself must be a professor of the faculty and is appointed by a special commission of the same. Twenty per cent is for instruction expenses and the last 10 per cent for administrative expenses. After one year the candidate has to pass an examination of "sufficiency," to which he is admitted only when he has attended at least 80 per cent of the lectures and has satisfactorily completed all the practical work. Without having passed the examination at the end of the first year he cannot register for the second year.

Sterility Due to Absence of Germinal Epithelium

Drs. E. B. del Castillo, F. A. de la Balze and A. Trabucco observed 5 cases of a new syndrome, the principal characteristics of which are sterility and small testicles in men who are otherwise normal. Biopsies of the testicles proved the complete absence of the germinal epithelium while Leydig's cells were normal; the tubules likewise had walls of normal structure and contained apparently normal Sertoli's cells. To explain the absence of the germinal epithelium the authors suppose—as a hypothesis—that the primary gonocyte did not penetrate in the primary testicle. The follicle-stimulating hormone in the urine was of normal quantity, the 17-ketosteroids somewhat diminished. They suppose that Sertoli's cells are the source of a hormone which is similar to estrogen which controls the production of the follicle-stimulating hormone of the hypophysis.

Ulcer of Cornea Caused by Thiocyanate

In 1944 Drs. Juan M. González and José Dorning Muñoz of the Spanish Hospital at Rosario reported 10 cases of ocular complications during the treatment of hypertension with potassium thiocyanate (of which 1 was ulcer of the cornea). They therefore advised an average dose of no more than 0.3 Gm. (0.2 to 0.4) per day, with which they had never observed toxic manifestations of importance, especially when given intermittently (during four or five days, then interrupted for two or three days). But in spite of these precautions 3 more cases of corneal ulcer have been observed by the same authors in the last two years. They admit that these observations are rather infrequent and that they have not been able to establish exactly the relation of cause and effect between the medicament and the lesion. However, it seems notable that the ocular alterations appeared simultaneously with the administration of the thiocyanate and disappeared when this medicament had been discontinued. The character of the lesions was benign with restitution ad integrum in a few days.

Prominent Visitors at Buenos Aires

It seems to us a good symptom of the intensified scientific interchange that—apart from eminent specialists who will be mentioned under "Brief Items" and who are particularly Americans—some prominent physicians have visited the Argentine during the last weeks. The first of them has been Dr. Morris Fishbein, who in his very active way visited in a short time all the important scientific institutions of Buenos Aires. He has been received by all the Argentine leaders of medicine, addressed the Academy of Medicine, speaking on recent progress in medicine, has been made a corresponding member of the Argentine Medical Association and made, indeed, a great lot of new and sincere friends.

Prof. Dr. de Gennes of the Faculty of Medicine of Paris read several papers on endocrine questions, particularly on pellets of hormones and on the endocrine treatment of hypertrophy of the prostate.

Professor Louis Michaud, director of the medical clinic of the Faculty of Lausanne (Switzerland) read papers on the respiratory function, the metabolism of iron, hereditary problems in neurology and some kidney problems, describing the research by his clinic during the last years. He also became a corresponding member of the Argentine Medical Association.

Dr. Georges Duhamel, writer, who is also a physician, addressed the National Academy of Medicine, speaking of the merits of the French investigator Charles Nicolle. He has been made an honorary member of the academy.

Brief Items

Prof. Dr. Domingo Brachetto Brian has been appointed by the government new director of the Instituto de Medicina Experimental, replacing Dr. Angel H. Roffo, who had to retire some months ago and died on July 24, at the age of 65. Dr. Brachetto Brian, who is a pathologist, studied in France with Roussy, Pierre Marie and several well known surgeons and also in the Curie Institute. He is professor extraordinary of the Faculty of Medicine of Buenos Aires and since 1936 has been director of the department of pathologic anatomy of the Hospital Ramos Mejía in Buenos Aires.

Correspondence

COMPLEX SIMPLE FRACTURE

To the Editor:—Realizing that the term "simple fracture" as generally defined is thoroughly inadequate to describe the trauma received in many so-called simple fractures, I have added a new definition to the simple and compound fracture nomenclature, i. e., "complex simple fracture" (Key, J. A., and Conwell, H. E.: The Management of Fractures, Dislocations and Sprains, ed. 4, St. Louis, C. V. Mosby Company, 1946, pp. 41-43).

A complex simple fracture is a fracture which is not compound but which has received severe trauma to either or all of the surrounding soft structures, i. e., skin, muscles, blood vessels and nerves. The bony fragments usually are displaced to a marked degree.

"Complex," as defined by "Webster's New International Dictionary," unabridged, is as follows: (1) an assemblage of related things; (2) a whole made up of complicated or interrelated parts.

The complex simple fracture should be further described as to the type of bony injury, for example: complex simple fracture (transverse, comminuted, spiral or oblique, as the case may be).

Through personal contacts and correspondence with the personnel of the three National Fracture Committees (American Medical Association, American College of Surgeons and American Academy of Orthopaedic Surgeons) with reference to their opinions and the necessity for such new fracture term or definition, there was unanimous agreement that such a definition of complex simple fracture was a necessary one and should be generally accepted and used in its broad meaning.

I make an appeal that this new fracture definition or its relative equivalent be used by the members of the medical profession. Besides expressing more adequately the pathologic process in such type fracture it will mean improved records for the hospitals and convey a better description of the fracture to the insurance companies, compensation boards and other related agencies, thereby being of much help to the patient, the physician and every one concerned.

I will appreciate any opinion or suggestions relative to the foregoing.

H. Earle Conwell, M.D., Birmingham, Ala.

ALLERGIC REACTIONS TO TYPHOID (T. A. B.) VACCINE?

To the Editor:—During the past months I have been variously interrogated whether I had any knowledge of allergic reactions after typhoid or T. A. B. vaccination. So far I have always given a negative answer. In numerous cases fainting was allegedly observed a few hours after the injections. In 1 case it was reported that a dangerous collapse had taken place.

When asked why an allergic case should be suggested, physicians based their diagnosis on Theodore J. Curphey's paper "Fatal Allergic Reaction Due to Influenza Vaccine" (The Journal, April 12, p. 1062). In that report a previous paper of V. E. Roth is cited: "Thus Roth reported 9 cases of allergic reactions to typhoid vaccines, in only 4 of which the patient gave a reliable history of allergy to egg protein." As typhoid vaccine is not prepared with any egg products I supposed a misprint. Roth's paper in the *United States Bulletin of the Army Medical Department* 1945 was inaccessible to me, so I looked up its abstract in The Journal (July 21, 1945, p. 904), where I gathered that the reported 9 cases of allergic reaction were derived not from typhoid but from typhus vaccine. This proves that the fears of an alleged influence of typhoid vaccine of allergic reaction are utterly baseless.

M. J. Gutmann, M.D., Jerusalem, Palestine.

THE EPIDEMIOLOGY OF POLIOMYELITIS

To the Editor:—Sabin asks in his article on "The Epidemiology of Poliomyelitis" (The Journal, June 28) Why did paralytic poliomyelitis become an epidemic disease only a little more than fifty years ago, and as such why does it seem to be affecting more and more the countries in which sanitation and hygiene, along with the general standard of living, are presumably making the greatest advances, while other large parts of the world, regardless of latitude, are still relatively unaffected?

My answer:

Let us take the hypothesis that a B hypovitaminosis is a disposing factor for poliomyelitic paralysis (see C. Braendli-Wyss: Propositions for Prophylaxes of the Poliomyelitic Paralysis, *Schweiz. med. Wchnschr.* **2:**40, 1945). The general B hypovitaminosis induced by the milling of fine flour and other changes in nutritional habits is followed in time by the appearance of the first poliomyelitic paralysis epidemic. Apart from that the countries with the best developed hygienic conditions are those with pronounced B hypovitaminosis. I am sure this is only one part of the problem, but I think it would be of general interest to discuss this in The Journal.

In any case it would be worth while to carry through an experiment on a large scale with your incomparable possibilities in schools or other institutions in your country by additional vitamin B supply.

C. Braendli-Wyss, M.D.,
Burgdorf, Switzerland.

IMMUNIZATION PROCEDURES IN PEDIATRICS

To the Editor:—In the discussion to the paper "Immunization Procedures in Pediatrics" given by J. J. Miller Jr. (The Journal, July 26), Dr. Thelander spoke about the variability of the capacity to be immunized as an important factor of vaccination. We have studied this variability by means of several thousand titrations of antibodies in vitro and in vivo and we have shown that the curve obtained by plotting logarithms of titer against incidence is a curve of normal distribution; this predisposition for immunity is hereditary and is different for different antigens in the same subject; i. e., a person who is prone to produce a good antibody response to one antigen does not show, on the average, a similar predisposition to produce other antibodies. Some exceptions to this rule are interesting only from a theoretical point of view (*Boll. Ist. Sieroter, Milanese* **24:**215, 1945, IV International Congress of Microbiology).

I have read with great interest the conclusions drawn by Dr. Miller and Dr. Thelander on the subject of immunization in older ages. In several Italian towns we have used an oral method of restoration of diphtheria immunity in adults and have obtained with the vaccine we have prepared good results: one 100 Lf tablet dissolved in the mouth daily for seven days was sufficient in more than 90 per cent of the adults to provoke a striking increase of antitoxin in the blood serum (in many cases from < 0.02 unit to more than 2 units) (*Riv. Ist. Sieroter. Italiano* **22:**49, 1947).

To avoid confusion in the American readers of European literature, I would like to point out also that the standardization of H. pertussis vaccines using the European standards of turbidity (Wellcome opacimeter, etc.) does not correspond to the American one. European vaccines have a concentration of bacteria approximately three times as strong as the American vaccines having the same labeled strength.

E. Carlinfanti, Naples.

Istituto Sieroterapico Italiano.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Workman's Compensation Act: Release Based on Untrue Statements of Physician May Be Set Aside.—The plaintiff filed an action to set aside a release made in a compromise settlement of an industrial accident injury. From a judgment for the plaintiff the defendant appealed to the Court of Civil Appeal of Texas.

The plaintiff suffered an injury in the course of her employment when some steel dust and shavings from a machine she was operating were blown into her eyes. After being under the care of a physician selected by the employer for some five weeks, during which time she did not work because of her eye condition and headaches, the defendant's claim agent called on her, said he had been informed that she had been dismissed by the physician and wanted to discuss a settlement of her claim. The plaintiff denied the dismissal, answering that she had another appointment the following Monday, and the claim agent left saying he would see the physician. A few days later he came back with the same information. The plaintiff again questioned the statement, whereupon the claim agent asked her to call the physician on the phone which she did. She said she recognized the doctor's voice; he told her that she should have been already advised about a dismissal, then dismissed her, saying that her eyes were all right and "It would be all right for me to settle." Accordingly she entered into a compromise settlement and signed the release in question. It subsequently developed, however, that the plaintiff was slowly losing the use of her eyes due to deterioration of the optic nerve; that there were scratches on the eyeball surface; that both eyes were infected, the infection going down to the corneal margin; that the plaintiff had photophobia, with evidence of injury to the cornea of the eye by particles of steel; that the plaintiff's trouble was slow deterioration of the optic nerve and inability of the eyes to fuse images; that the defect was in the nerve and could not be cured by glasses; and that the injury sustained at the plant reasonably caused the condition of the plaintiff's eyes.

This action, said the Court of Appeals, is based on the well settled equity doctrine that representations of an existing fact or condition by a releasee's doctor, relied on by the releasor, are sufficient grounds for avoidance if the representations are proved to be untrue in fact. The defendant, however, contended that this principle was not applicable because the evidence showed that the plaintiff knew in her own mind at the time she signed the release that her eyes were not getting well. The court said, however, that "The fact that the releasor had doubts as to the correctness of the representations of the physician of the releasee regarding the extent of his injuries will not prevent the setting aside of the release, on the theory that in executing it the releasor acted on his own judgment, and not on that of the physician, if in fact the representation of the latter did in fact influence him in making the settlement." On a review of all the evidence, the court was of the opinion that the judgment in favor of the plaintiff setting aside the release should be affirmed.—*Associated Employers Lloyds v. Aiken, 201 S. W. (2d) 856 (Texas, 1947).*

Railroad Hospital as Public Charity Exempt from Taxation—Pulaski County, the City of Little Rock, the Little Rock Special School District and an individual property owner filed a petition with the Arkansas Public Service Commission to have the property of the defendant hospital association placed on the assessment roll for ad valorem taxes. The Public Service Commission made the order requested by the plaintiffs, which order was affirmed by the Pulaski Circuit Court, so the defendant appealed to the Supreme Court of Arkansas.

Article 16, section 5, of the Arkansas constitution says, in part, ". . . the following property shall be exempt from taxation: . . .. buildings and grounds and materials used exclusively for public charity." And the defendant claims that its property is exempt under the aforequoted portion of the constitution.

Defendant is a benefit association organized under the laws of Missouri and composed of the employees of the Missouri Pacific Railroad Company and the Missouri Pacific Transportation Company. Defendant owns the hospital in Little Rock, and the employees of the railroad and transportation companies support the hospital by contributions from their wages and salaries each month and these employees have absolute and exclusive control over the hospital. The hospital is principally opened to retired employees of these companies and to members of their families, but, in addition, the hospital receives some people who become sick or are injured on the property of the railroad or transportation company. The hospital does not "go out and take in the public generally that might come in and ask for admission." The employee contributions are fixed by the board of trustees of the hospital, based on a scale depending on the amount of wages of each employee. The assessments are made to meet the requirements of the hospital and, in the event that the hospital accumulates a surplus, the assessments are reduced or temporarily suspended.

These facts, said the Supreme Court, show that the property is not used "exclusively for public charity." In a prior Arkansas case the Supreme Court held the following to be some of the essentials (existing in that case) necessary to allow exception of property "used exclusively for public charity": A. The institution was opened to any worthy sick person regardless of ability to pay. B. No funds were diverted from the institution and whatever profit was realized from those who paid went to the benefit of those who could not pay, to extend and enlarge the charity of the hospital. Neither of these two essentials, the court pointed out, is present in the case at bar. The defendant hospital is not open to "any worthy sick person"; it is open only to the Missouri Pacific employees, their families and persons who may become sick or injured on Missouri Pacific property. Furthermore, if the hospital accumulates a surplus it is returned to the members by reducing or temporily suspending assessments. In short, the proof shows that the hospital is not used "exclusively for public charity" and the use is the determining factor.

Continuing, the court said that a most enlightening case, construing the Arkansas constitutional provision as applied to a hospital operated for benefit of railway employees, is *St. Louis Southwestern Railway Company v. Yates, 23 F. (2d) 283.* In that case the United States Circuit Court of Appeals of the Eighth Circuit decided that a hospital in Texarkana, Ark., was not exempt from taxation. The court said "Funds to support the institution are to be obtained by assessments, based on a wage earning scale, collected monthly from the employees. There are other provisions which emphasize those above quoted or outlined but sufficient has been said to show the general plan of the trust to be that the use of the property is confined to the employees (and their dependents) of appellant and its affiliated lines. The public in general, nor any part thereof nor any indefinite class have any right to any use in this property and it is in no wise supported by any charitable gifts or donations, but only by the direct beneficiaries thereof and by contributions, in the form of loans, from the railways whose employees are protected. In short, it is merely the familiar plan of a hazardous business providing hospital and medical services for those engaged therein. It seems to us that this is clearly not a usage 'exclusively for public charity.' . . ."

The defendant relied most strongly on act 40 of 1931 as granting the exemption from taxation. This act provides: "All corporations or institutions heretofore or hereafter organized, created and operated as a hospital for the purpose of treating the members of said organization and others, not leased or otherwise used with a view of profit, are hereby declared to be institutions of public charity and shall be free from taxation." But the vice of the defendant's argument in reliance on this act, said the Supreme Court, lies in the unconstitutionality of the act as applied to the facts of this case. Article 16, section 5, of the constitution provides what property is exempt from taxation; article 16, section 6, provides: "All laws exempting property from taxation other than as provided in this constitution shall be void." When we held as we have above that the defendant's property was not "used exclusively for public charity," then article 16, section 6, of the constitution strikes down any legislative attempt to grant defendant any exemption from taxation. We therefore conclude that act 40 of 1931 is unconstitutional in so far as it attempts to grant tax exemption to property not exempt under article 16, section 5, of the constitution and for that reason does not support the defendant in this case.

Finally, the defendant cited orders of the Pulaski County Court, made in 1925 and 1931, and an order of the Arkansas Tax Commission, made in 1929, each declaring defendant's property to be exempt from taxation and claimed that these orders rendered res judicata any and all questions as to taxability of defendant's property in the present proceedings. We hold, said the court, that a judgment rendered in one year, holding property to be exempt from taxes because "used exclusively for public charity," is not res judicata regarding the taxes of the property for a subsequent year. The great weight of authority is to the effect that an adjudication on liability for taxes of one year is no bar to an action for taxes for a subsequent year. We therefore hold that the defendant's plea of res judicata is without merit.

A dissenting opinion states, in part. "It will be observed that the exempting provisions of the constitution do not attempt to define 'public charity,' so as I view it, the present case presents this question: Can the legislature within reasonable limitations find and declare as the public policy of this state what constitutes public charity and what types of institutions shall be declared institutions of public charity. I think it has that power. Certainly, the legislature of this state has the power to, and does, declare the state's public policy and when, as here, it has by legislation declared the state's public policy to be that all corporations or institutions coming within the provisions of act 40, supra 'are hereby declared to be institutions of public charity and shall be free from taxation' it was, it seems to me, acting within its powers and this court would not be warranted in striking down this legislation as being in contravention of the constitution."

The judgment of the circuit court holding the hospital association property to be taxable was affirmed.—*Missouri Pacific Hospital Association v. Pulaski County, 199 S. W. (2d) 329 (Ark., 1947).*

Unauthorized Autopsy—Mistake in Identity of Corpse.—The plaintiff sued for damages alleged to have been sustained by virtue of the performance of an unauthorized autopsy on the body of her deceased husband. The defendants are the manager of health and charity and ex officio coroner and superintendent of the Denver General Hospital, the deputy coroner in charge of the morgue and the pathologist for the Denver General Hospital. From a judgment for the plaintiff, the defendants appealed to the Supreme Court of Colorado.

The plaintiff's husband and one William Lloyd were patients in the Denver General Hospital and occupied adjoining beds in the same room. Both men died on the same day, just five minutes apart. Pursuant to the rules and regulations of the hospital, the room nurse, who had been taking care of both patients, prepared death tags for them but "through mistake or inadvertence" she attached the tag prepared for Lloyd to the body of the plaintiff's husband. Following the deaths, the Lloyd family consented in writing to an autopsy on his body, but the plaintiff refused to consent to an autopsy on the body of her husband. Because of the mistake in the tags, however, the wrong body was delivered to the morgue and consequently the defendant Williams, pathologist at the hospital, with no knowledge of the circumstances, proceeded mistakenly to perform an autopsy on the body of the plaintiff's husband. The autopsy was performed in a proper and scientific manner.

The court first pointed out that the city itself was not liable. Municipal corporations, said the Supreme Court, exercise two classes of powers, "one . . . is of a public and general character, to be exercised in virtue of certain attributes of sovereignty delegated to it for the welfare and protection of its inhabitants; the other relates only to special or private corporate purposes, for the accomplishment of which it acts, not through its public officers as such, but through agents or servants employed by it. In the former case its functions are political and governmental, and no liability attaches to it, either for nonuser or misuser of power; while in the latter, it stands upon the same footing with a private corporation, and will be held to the same responsibility with a private corporation for injuries resulting from its negligence. . . . The authorities are practically agreed in placing certain general duties in the class that is governmental, and among those is the general duty of the preservation of the public health." Considering, continued the court, that the hospital, where the events upon which plaintiff relies occurred, was maintained and operated "for the purpose of preserving and maintaining the health of the people of the said City and County of Denver," we are pursuaded that the municipal entity was carrying on in its governmental, not its corporate, capacity, hence would not be liable.

Likewise, continued the court, those subjected to action here must stand absolved from liability. Schwalb, the manager, Economy, the deputy coroner, Williams, the pathologist, and the nurse who erred in attaching death tags, all were employees of the identical employer, the City and County at Denver. The basic error was that of the nurse, who was not made a party defendant. Defendants Schwalb and Economy had no part in what occurred, did not order or direct it, or even have knowledge thereof. Defendant Williams proceeded in accordance with information made manifest in apparent and usual course, and, so far as appears, without any wantonness, evil intent or wrongful purpose. In such circumstances, what he did was not actionable. The occurrences, clearly resulting from untoward happenings, were most unfortunate and regrettable. So far as revealed, however, all were the logical result of lack of care of the nurse, who was not made a party defendant. "The doctrine of respondeat superior applicable to the relation of master and servant does not apply to a public officer so as to render him responsible for the acts or omissions of subordinates whether appointed by him or not, unless he, having the power of selection, has failed to use ordinary care therein, or unless he has been negligent in supervising the acts of such subordinates, or has directed or authorized the wrong." In order for these exceptions to the rule to have consideration, however, the court concluded, they must be alleged in the complaint, which was not done in this case. Accordingly the judgment in favor of the plaintiff was reversed.—*Schwalb v. Connely, 179 P. (2d) 667 (Colo., 1947).*

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

BOARDS OF MEDICAL EXAMINERS
BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Examinations of the boards of medical examiners and boards of examiners in the basic sciences were published in The Journal Oct. 18, page 452.

NATIONAL BOARD OF MEDICAL EXAMINERS

National Board of Medical Examiners: *Part III.* New Haven, Jan. 7-9; New York, Jan.; San Francisco, Dec. 16-18; Washington, Nov. 11-13. Exec. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia 2.

EXAMINING BOARDS IN SPECIALTIES

American Board of Neurological Surgery: *Oral.* Chicago, May or June. Final date for filing application is Feb. 1. Sec., Dr. W. J. German, 310 Cedar St., New Haven, Conn.

American Board of Obstetrics and Gynecology: *Part I. Written.* Various Centers, Feb. 6. Final date for filing application is Nov. 1. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh 6.

American Board of Orthopaedic Surgery: *Part I.* April-May. Applications are accepted for the next examination until Jan. 15, 1948. Sec., Dr. Francis M. McKeever, 1136 W. 6th St., Los Angeles 14.

American Board of Pediatrics: Dallas, Dec. 5-7. Philadelphia, Jan. 9-11. Sec., Dr. Lee F. Hill, 718 Royal Union Bldg., Des Moines 9.

American Board of Plastic Surgery: Examinations are given in April and November of each year in the home town of applicants. Sec., Dr. Robert H. Ivy, 1930 Chestnut St., Philadelphia.

American Board of Psychiatry and Neurology: *Oral.* May 1948. Final date for filing application is Feb. 15. Sec., Dr. F. J. Braceland, 102-110 Second Ave., S.W., Rochester, Minn.

American Board of Radiology: *Oral.* Chicago, June 1948. Final date for filing application is March 1. Sec., Dr. B. R. Kirklin, 102-110 Second Ave., S.W., Rochester, Minn.

American Board of Surgery: *Written.* Various Centers, March. Final date for filing application is Dec. 1. Sec., Dr. J. S. Rodman, 225 S. 15th St., Philadelphia 2.

American Board of Urology: Chicago, February. Final date for filing application is Nov. 1. Sec., Dr. Harry Culver, 1409 Willow St., Minneapolis 4.

Current Medical Literature

AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

74:1-120 (July) 1947

Cerebral Damage in Infants and in Children: Observations on Its Causes and Possibilities of Its Prevention. H. K. Faber.—p. 1.
*Early Immunization Against Pertussis. J. M. Adams, A. C. Kimball and F. H. Adams.—p. 10.
Oral Administration of Penicillin in Pediatrics. H. A. Reisman, A. A. Goldfarb and Molly Molloy.—p. 19.
Syndromes of Kerosene Poisoning in Children. M. M. Steiner.—p. 32.
*Secondary Pancreatitis. P. V. Véghelyi.—p. 45.
Factors Influencing Retention of Nitrogen and Calcium in Period of Growth: VII. Effect of Methyl Testosterone. J. A. Johnston.—p. 52.
*Islet Cell Tumor of Pancreas in Newborn Infant (Nesidioblastoma). H. Sherman.—p. 58.
Diphtheria of Esophagus: Case Involving Stomach and Tongue. A. L. Hoyne.—p. 80.

Immunization Against Pertussis. — Adams and his co-workers studied a selected group of mothers and babies who were followed at approximately monthly intervals throughout the first year of the infant's life. Infants were given three inoculations consisting of phase I superconcentrate vaccine, 2.5 cc. (40 billion organisms per cubic centimeter) or a total dose of 100 billion organisms given at weekly or monthly intervals. The dosage schedule was 0.5 cc., 1 cc. and 1 cc. Mothers who were immunized during the last trimester of pregnancy were given three inoculations at two week intervals for a total of 100 billion organisms. With weekly inoculations good antibody titers could be demonstrated in over half of the infants by the age of 1 month to 6 weeks. Monthly inoculations gave a slower but more permanent rise. A combination of the two procedures might offer the best chance of early protection to the infant. Increased dietary protein did not enhance the infant's capacity to form antibodies. Specimens of cord blood from mothers immunized in the last trimester of pregnancy contained antibodies but in somewhat lower amounts than the mother's serum. This antibody titer is gradually lost by the infant during the first six months of life. One hundred and forty-two pairs of specimens of antepartum and cord blood from unimmunized mothers were tested. Hemophilus pertussis antibodies were absent in both specimens in 109 pairs. Hemophilus pertussis antibodies were present in colostrum but in lower titer than in the maternal or cord blood; their significance in the human being is probably negligible.

Secondary Pancreatitis.—Véghelyi reports 1 case of mild pancreatitis following parotitis in a boy aged 4 years, 1 of severe pancreatitis following scarlet fever in a girl aged 7 years and a third case due to parotitis in a boy 4½ years of age who died. Pancreatitis, contrary to the general belief, is a frequent complication of certain diseases. It may subside without stormy symptoms, and only the diminution of some enzymes, especially of lipase, and the resulting deficiency condition leading to celiac syndrome may point to it. It is important that the condition be diagnosed in its earliest stage, as the process is no longer reversible after it has become chronic. In such cases the patients require large doses of pancreatic extracts or enzyme preparations and an almost fat-free diet. Milk can render good service if gastric lipase is present. Parenteral administration of vitamins A, D and K is of importance.

Islet Cell Tumor of Pancreas.—In Sherman's case of spontaneous hypoglycemia due to insular tumor of the pancreas (nesidioblastoma) in a newborn infant twitchings and convulsions were observed twenty-four hours after delivery. There was early a good response to administration of dextrose and injection of epinephrine, with a dextrose tolerance curve demonstrating rapid removal of the circulating glucose. Extrapancreatic causes of hypoglycemia were excluded. The mother was nondiabetic. A clinical diagnosis of hyperinsulinism was made and an exploratory laparotomy was performed. Neither resection nor biopsy of the pancreas was performed by the surgeon because the gland appeared normal in size, contour and consistency. This error has been stressed. The necropsy revealed typical islet cell adenoma, almost microscopic in size, and yet the active hormone secreted by it was either so great in amount or so potent in its effect as to cause a fatal outcome; the supportive treatment kept the patient alive for six and one-half weeks despite the severity of the convulsions. The mother's symptoms, including fatigue, somnolence and excessive sweating during the latter part of gestation, are suggestive of a hypoglycemic effect on the mother by the excessive insulin-secretory activity of the fetal pancreatic adenomatous tissue. Routine determinations of sugar in the blood should be made in the neonatal period and in pregnant women with symptoms suggestive of hypoglycemia in the last trimester.

American Journal of Public Health, New York

37:803-958 (July) 1947

Mouse Protection Tests in Study of Pertussis Vaccine: Comparative Series Using Intracerebral Route for Challenge. P. L. Kendrick, Grace Eldering, M. K. Dixon and J. Misner.—p. 803.
Wartime Army Medical Laboratory Activities. G. J. Dammin.—p. 811.
Common Rat as a Source of Erysipelothrix rhusiopathiae. C. H. Drake and Elizabeth R. Hall.—p. 846.
Health Education in Mexico. M. G. Rivera.—p. 849.
Evaluation of Effectiveness of Astoria Plan for Medical Service in Two New York City Elementary Schools. A. Yankauer Jr.—p. 853.
Rickettsialpox: Newly Recognized Rickettsial Disease: III. Epidemiology. M. Greenberg, O. J. Pellitteri and W. L. Jellison.—p. 860.
Inactivation of Partially Purified Poliomyelitis Virus in Water by Chlorination: H. S. G. Lensen, M. Rhian and M. R. Stebbins. —p. 869.
Regionalism in Relation to Health of the Public. C. W. Strow.—p. 889.
Municipal Public Health Engineering: Data on Current and Proposed Local Sanitation Division: L. M. Board and others.—p. 901.
Newspapers: Public Health Allies. P. F. Ellis.—p. 907.

37:959-1088 (Aug.) 1947

Health Councils in Local Communities. B. Marquette.—p. 959.
Need for Systematic Evaluation of Substandard Housing. M. A. Pond. —p. 967.
Microbiology of Spray-dried Whole Egg: II. Incidence and Types of Salmonella. Mathilde Solowey, V. H. McFarlane, E. H. Spaulding and Cecilia Chemerda.—p. 971.
Shellfish: Report of the Committee. M. H. Bidwell and others.—p. 983.
*Cheese and Its Relation to Disease. F. W. Fabian.—p. 987.
Cardiolipin and Purified Lecithin as Reagents in Syphilis Serology. A. Harris and J. F. Mahoney.—p. 997.
Importance of a Standard Code for Tabulating Causes of Illness. S. D. Collins.—p. 1002.
Morbidity Statistics Through Periodic Sample Surveys of Households. T. D. Woolsey.—p. 1007.
Experience with Vaccination Against Influenza in Spring of 1947: Preliminary Report. T. Francis Jr., J. E. Salk and J. J. Quilligan Jr. —p. 1013.
Proposed Statistical Classification of Diseases, Injuries and Causes of Death: Prepared by United States Subcommittee. E. S. Rogers. —p. 1017.
Bacteriologic Procedures in Sanitary Air Analysis. W. F. Wells and others.—p. 1023.
Yellow Fever Vaccination, Simple or Associated with Vaccination Against Smallpox, of Populations of French West Africa by Method of Pasteur Institute of Dakar. M. Peltier.—p. 1026.
Allergy in Brucellosis. A. P. Leon and J. Sosa.—p. 1033.

Cheese and Its Relation to Disease.—Fabian states that since 1883 there have been reported in the United States and Canada 59 epidemics with 2,904 cases of disease and 117 deaths in which cheese was the causal factor. There is reason to believe that this represents only a part of the disease caused by cheese. The organisms most commonly associated with cheese-borne infections are members of the Salmonella group such as Salmonella aertrycke, schottmülleri, typhosa, suipestifer, typhimurium and choleraesuis; Staphylococci such as Staphylococcus albus and aureus; Brucella melitensis and Clostridium botulinum. Contrary to the opinion of many cheese makers, pasteurized milk makes a consistently higher scoring and better flavored Cheddar cheese than does raw milk. Cheese made from pasteurized milk can be ripened in about half the time required to ripen that made from raw milk, because it can be held at a higher temperature. There are seven states and Canada that now require cheese to be made from pasteurized milk or cream or to be held in storage for periods ranging from sixty to one hundred and twenty days in lieu of pasteurization. The sixty day holding period is considered too short, because pathogens may survive this storage period, especially if the cheese is held at low temperatures, 40 to 50 F. (5 to 10 C.). A ninety day holding period is considered preferable and one hundred and twenty days still better. All milk used in making soft cheeses should be required to be pasteurized, because many soft cheeses cannot be held for sixty days without spoilage or deterioration in quality.

Am. J. Roentgenol. & Rad. Therapy, Springfield, Ill.

58:1-128 (July) 1947

Developments in Medical Physics Having Application to Radiation Therapy. H. B. Jones.—p. 1.
*Radioactive Phosphorus as External Therapeutic Agent in Basal Cell Carcinoma, Warts and Hemangioma. B. V. A. Low-Beer.—p. 4.
Deposition of Radioactive Metals in Bone as Potential Health Hazard. D. H. Copp, Dorothy J. Axelrod and J. G. Hamilton.—p. 10.
*Retention of Radioactive Iodine in Thyroid Carcinomas: Histopathologic and Radio-Autographic Studies. L. D. Marinelli, F. W. Foote, R. F. Hill and A. F. Hocker.—p. 17.
Nephrocalcinosis. J. H. Vaughan, M. C. Sosman and T. D. Kinney. —p. 33.
Significance of Indentures in Outlines of Atria of Lateral Ventricles After Air Filling. M. H. Peppel and J. F. Roach.—p. 46.
*Cranial Manifestations of Fibrous Dysplasia of Bone: Relation to Leontiasis Ossea and to Simple Bone Cysts of Vault. F. Windholz.—p. 51.
Pulmonary Emphysema and Tuberculosis. Roentgenologic and Pathologic Study. A. Guggenheim.—p. 64.
Loeffler's Syndrome. A. W. Pearlman.—p. 75.
Roentgenologic Characteristics of Diaphragmatic Hernia. B. R. Kirklin and J. R. Hodgson.—p. 77.
Myelographic Demonstration of Avulsing Injury of the Brachial Plexus. F. Murphey, W. Hartung and J. W. Kirklin —p. 102.
Physiologic Stasis: Cause of Cholecystographic Error. A. A. Brewer. —p. 106.
Roentgen Appearance of Double Gallbladder Simulated by Gallbladder with Congenitally Folded Fundus: Case Report. R. E. Alexander. —p. 112.

Radioactive Phosphorus as External Therapeutic Agent. —Despite the obvious possibilities of using radioactive phosphorus (P^{32}) solution for external application to the skin, difficulties were encountered by Low-Beer in developing a technic which would insure exactly reproducible exposures and reactions. After experimentation with absorbent cotton, petrolatum, wool fat, blotting paper, acacia, higher alcohols and other substances, it was found that ordinary thin blotting paper is a most suitable vehicle. Blotting paper of known dimensions soaked in measured amounts of radioactive Na_2HPO_4 (sodium phosphate) solution, and dried, can be applied easily to any part of the skin. After preliminary experimental studies, about 400 skin lesions have been treated by the external local application of radioactive phosphorus. The lesions included carcinoma, hyperkeratosis, warts and hemangiomas. Over 90 per cent of the lesions disappeared. The author is aware of the inadequacy of expressing the dose by giving the amount of the radiating source and the time of exposure. At present this seems to be the least confusing and misleading dosage determination. The ultimate aim is to express the dose in some unit which will reveal more about the energy dissipated in the tissues. There is no intention to advance the method described in competition with long-established procedures. The present study has served to emphasize the usefulness of one of the many by-products of the chain-reacting piles established for the production of plutonium and uranium 235.

Retention of Radioactive Iodine in Thyroid Carcinoma. —Marinelli and his associates state that tissue sections and radioautographs from 19 cases of thyroid carcinoma have been studied during the past three years at the New York Memorial Hospital. Tracer or therapeutic doses of radioactive iodine are administered to the patient by mouth. Within twenty-four to forty-eight hours the surgical procedure is carried out. Blocks of tissue about 2 to 3 mm. in thickness are fixed in 10 per cent solution of formaldehyde. Wherever possible, blocks of noncancerous thyroid are included. The tissue blocks are dehydrated in dioxane and impregnated with paraffin. Thin sections are cut with a microtome, and these are dried in an oven or over a flame. After the sections are dried the paraffin is removed by passing the sections through several changes of fresh xylene. The exposed surfaces of the deparaffinized sections are then placed directly against the emulsion surface of a photographic plate or roentgen film. Among the 19 cases there were 10 in which the presence of radioactive material was detectable by radioautographic determinations. Five of these were examples of benign metastasizing struma. The remaining 5 had the structure of follicular adenocarcinoma. However, the reporting of positive observations in 10 of 19 cases of thyroid carcinoma is misleading because many of these 19 cases were selected. On the basis of present results and the estimation of the relative frequency of the various types of thyroid carcinomas approximately 15 per cent of thyroid cancers may be expected to accumulate radioactive iodine. Radioautographs do not indicate the exact distribution of radiation in a tumor, because they are obtained from radiation originating in a few microns of tissue and not in a tissue block of thickness comparable to the range of the beta particles. Since the isotopes of radioiodine emit gamma rays, there remains the possibility of administering the isotopes in amounts sufficient to deliver gamma radiation throughout heterogenous tumors. Therapeutic attempts now in progress will provide the answer to this question.

Cranial Manifestations of Fibrous Dysplasia of Bone.— Windholz says that numerous contributions to the knowledge of polyostotic fibrous dysplasia have established the fact that the skull is frequently involved in this disorder. Roughly, in 10 cases of monostotic skeletal involvement 1 cranial case has been recorded. In moderate skeletal involvement about half the cases show skull changes. In severe skeletal disease the skull participates constantly. Occasionally the skull exhibits the only manifestations of the disease. Pathologic and roentgenologic evidence of foci of the disease are in limited cranial manifestations—small, simple, cystlike bone blisters in the vault. In more advanced cases localized deformities with translucencies and densities within the deformed areas are observed. In later stages extensive, dense, bony islands and spicules become visible in the expanded parts. In severe involvement the entire vault, the base of the skull and the facial skeleton are deformed. Bone deposits are maximal and are localized mainly at the base of the skull and in the face. Prior to the differentiation of fibrous dysplasia from related conditions, misinterpretations were frequent. They were classified as cranial hyperostosis or, if localization was unilateral, as hemicraniosis, hemihypertrophy, unilateral hyperostosis, unilateral von Recklinghausen's disease, osteitis fibrosa cystica of the skull and the like. Most of the advanced cases have been reported as leontiasis ossea. There are indications that skull specimens known as leontiasis ossea were actually fibrous dysplasia. The basic tissue change is replacement of the diploe by connective structures (visualized roentgenographically as translucencies) in which irregular, poorly or completely ossified, nonlamellated bone tissue may develop (visualized as densities).

Annals of Otol., Rhin. and Laryngology, St. Louis

56:245-510 (June) 1947. Partial Index

Tissue Changes in Sinus Membranes After Penicillin Treatment. R. A. Fenton and O. Larsell.—p. 245.
*Tracheotomy in Bulbar Poliomyelitis. R. E. Priest, L. R. Boies and N. F. Goltz.—p. 250.
Hearing Impairment Due to Craniocerebral Trauma. W. E. Grove. —p. 264.
*Statistical Study of Poliomyelitis in Relationship to Tonsillectomy. P. M. Pedersen.—p. 281.
Surgical Treatment of Nasopharyngeal Fibroma. J. M. Brown.—p. 294.
Influence of Constitutional Factors in Otologic Conditions. B. J. McMahon.—p. 298.
Diverticulum of the Esophagus. A. C. Furstenberg.—p. 305.
Endaural Surgery for Chronic Mastoiditis. W. W. Morrison.—p. 317.
*Thyroid and the Nose. A. W. Proetz.—p. 328.
Some Physical Properties of the Conduction Apparatus. H. B. Perlman. —p. 334.
*Present Status of Diphtheria. E. H. Place.—p. 347.
"Ménière's"—A Synonym of Confusion. H. W. Lyman.—p. 352.

Tracheotomy in Bulbar Poliomyelitis. — According to Priest and his associates, during the 1946 epidemic of poliomyelitis in Minneapolis 400 cases were diagnosed as the bulbar type. In 75 of these tracheotomy was performed, and 29 patients survived. At some of the hospitals tracheotomy was done when the following indications existed: respiratory distress as evidenced by recurrent cyanosis, coarse rales in the chest and laryngeal stridor; excitement and unmanageability, causing the patient to resist pharyngeal aspiration; stupor of a degree sufficient to make the patient oblivious of the accumulation of secretion in his airway; inability to cough effectively; pharyngeal pooling of mucus; vocal cord paralysis, or intralaryngeal hypesthesia demonstrable by laryngoscopic examination. Physicians in charge of the adult neurology service came to believe that tracheotomy gave the patient his best chance if it was performed before cyanosis occurred, because cyanosis can only be diagnosed clinically when it is rather far advanced and when anoxia has caused irreversible damage to a central nervous system already damaged by the virus. The authors conclude that tracheotomy improves the chance for survival of properly selected patients, and that tracheotomy used in conjunction with various means for producing artificial respiration will enable some patients who are critically ill with poliomyelitis to survive.

Poliomyelitis in Relation to Tonsillectomy.—Pedersen reviews material from the files of the San Francisco City and County Hospital and the Children's Hospital of the same city. All facilities for hospitalization of poliomyelitis patients in the city of San Francisco are in the contagion wards of these two hospitals. The incidence of poliomyelitis to the general population in the epidemic year 1943 was in a ratio of 1 to 1,960, while the incidence of poliomyelitis after tonsillectomy for the same period was in a ratio of 1 to 1,782. The incidence of poliomyelitis following recent tonsillectomy is not greatly out of proportion to the ratio of disease to the general population during an epidemic year. However, there is a higher incidence of bulbar and bulbospinal type poliomyelitis in tonsillectomized patients than in nontonsillectomized patients, the ratio being 2 to 1.

Thyroid and Nose.—Proetz states that certain indolent and intractable nasal conditions are peculiar to the type of person regarded as hypothyroid. He concludes from a survey of 84 cases that deficiency of the thyroid hormone may result in two types of changes in the nasal mucosa: (1) red, dry, irritated, "chapped" or desquamative; (2) pale and boggy. Patients deficient in the thyroid hormone may have an increased tendency to nasal infection and nasal allergy, which can be corrected by the administration of thyroid extract alone. Headache and nasal obstruction are prominent symptoms. The basal metabolic rate is helpful but not infallible in distinguishing cases suitable for treatment with thyroid extract.

Present Status of Diphtheria.—Place thinks that the present interest in diphtheria is probably due to fear of spread of a new virulent type for which antitoxin is more or less ineffectual and conditioned by a prior idea that diphtheria had been quelled. Neither of these ideas is entirely true. Place cites figures on the diphtheria mortality in Boston, Europe and Great Britain to point out that, although fluctuation of the virulence of diphtheria occurs, it is not associated with the development or introduction of a peculiar, fixed strain. The apparent ineffectuality of antitoxin is more likely to be related to the time of treatment and the speed of the toxin's action. If antitoxin is delayed more than twenty-four hours after the onset of the infection some deaths occur, and the percentage death rate rises rapidly with each day's additional delay. The conception of antitoxic immunity to diphtheria in Schick-negative persons has often been too dogmatic. Immunity is relative, and it is impossible to set the level of immunity that will protect under all conceivable conditions of infection and virulence. Immunization with two doses of alum-precipitated toxoid or aluminum hydrate absorbed toxoid at intervals of three weeks to three months or three doses of soluble toxoid every three to six weeks is satisfactory. Booster or recall doses of toxoid every three to five years are considered desirable although not yet proved essential. Children should be given toxoid or a similar antigen preferably between the sixth and eighth months of age. For treatment, despeciated antitoxin treated chemically and with pepsin-hydrochloric acid or a similar digestant has a great advantage, being low in bulk and largely free from protein reactions as compared to the high percentage of reactions from crude antitoxin. Sulfonamide compounds and penicillin have had no effect on the treatment of diphtheria but are of value in reducing the dangers from secondary infections. Penicillin has proved to be the best therapeutic agent available for the carrier state.

Bulletin of Johns Hopkins Hospital, Baltimore

80:299-376 (June) 1947

*Certain Vascular Effects of Curare in Man: The "Histamine" Reaction. D. Grob, J. L. Lilienthal Jr. and A. M. Harvey.—p. 299.

Physiologic Studies in Congenital Heart Disease: III. Results Obtained in 5 Cases of Eisenmenger's Complex. R. J. Bing, L. D. Vandam and F. D. Gray.—p. 323.

Impact of Modern Psychiatry on Medical Education, Medical Practice, and Hospital Organization. L. S. Kubie.—p. 348.

Vascular Effects of Curare in Man.—Grob and his associates found that intracutaneous administration of curare and of *d*-tubocurarine chloride to human subjects produced a local flare and wheal with pseudopods. Intra-arterial administration of the drug produced weakness, discoloration, swelling and wheals of the injected forearm and hand; evidence of local and general vasodilatation, and increased secretion of gastric acid. Intravenous and intramuscular administration produced no evident swelling or wheals and less peripheral vasodilatation and secretion of gastric acid. The intracutaneous and intra-arterial administration of histamine produced vascular effects similar to those of curare. The local and general vascular effects of curare were inhibited by the prior or simultaneous administration of the antihistaminic drug, "pyribenzamine" (tripelennamine hydrochloride). The vascular effects of curare suggests that the intra-arterial administration of this drug causes the release of a histamine-like substance which acts first locally and then systemically. This substance apparently also is released after intracutaneous administration of curare and to a lesser degree after intramuscular and slow intravenous injection. The release of a histamine-like substance following the administration of curare may explain the occurrence during curarization of vascular and other phenomena which resemble the effects of histamine. "Pyribenzamine" may prove to be of value in the prevention and treatment of these histamine-like actions of curare.

Gastroenterology, Baltimore

9:1-117 (July) 1947

Gastroscopy and Lymphoma of Stomach. R. J. F. Renshaw and Francis M. Spencer.—p. 1.

*Hyperventilation Syndrome in Gastroenterology. T. E. McKell and A. J. Sullivan.—p. 6.

Tertiary Gastric Syphilis. W. A. Knight and A. Falk.—p. 17.

*Homologous Serum Hepatitis in a Civilian Hospital. L. T. Rosenthal. —p. 28.

Perforations from Proctoscopy. A. F. R. Andresen.—p. 32.

Carotene and Vitamin A Metabolism in Man: Their Excretion and Plasma Level as Influenced by Orally Administered Mineral Oil and a Hydrophilic Mucilloid. A. E. Mahle and Helen M. Patton.—p. 44.

Nutritional State of Patients with Peptic Ulcer as Measured by Vitamin Levels in Blood and Urine. D. Cayer and S. Cody.—p. 54.

Experimental Studies on Biliary Regurgitation During Cholangiography. H. W. Mixer, L. G. Rigler and M. V. G. Oddone.—p. 64.

Effect in Vivo of Sodium Alkyl Sulfate on Peptic Activity. E. R. Breitweiser.—p. 81.

Hyperventilation Syndrome in Gastroenterology.—McKell and Sullivan found that in 500 consecutive ambulatory patients with gastrointestinal complaints hyperventilation was recognized 29 times, an incidence of 5.8 per cent. One of the commonest symptoms of hyperventilation is dizziness. Other common symptoms are air hunger, sensation of tingling or numbness, palpitation and precordial or substernal pain. The most important basis for the production of the syndrome appears to be chronic anxiety. Abdominal symptoms are frequently the mechanism by which attacks are initiated. The attacks often occur so frequently that a conditioned reflex is established, which may be reproduced by any of various stimuli originally present. Recognition and demonstration of the hyperventilation syndrome to the patient are frequently the key to the management of a baffling clinical problem.

Homologous Serum Hepatitis.—Rosenthal observed during a ten month period 4 instances of probable homologous serum hepatitis on the gastrointestinal service of the Graduate Hospital of the University of Pennsylvania. Six hundred and ninety-five units of blood and plasma (including pooled plasma obtained from the Office of Civilian Defense) were administered to 98 patients. The incubation period ranged from fifty-six to ninety-three days. Because of the onset of icterus following the administration of blood and plasma, particularly in the absence of any known exposure to other cases of infectious hepatitis, the jaundice was considered to be due to homologous serum hepatitis. The possibility of the jaundice being due to common infectious hepatitis cannot be excluded. Three patients received blood and plasma; 1 patient received plasma only. No frank jaundice was observed in any patient who had received whole blood exclusively during this period. The symptoms were mild. Therapy consisted in the administration of a high carbohydrate, high protein diet supplemented by the parenteral administration of dextrose and amino acids and the use of vitamin supplements, including vitamin K.

Hawaii Medical Journal, Honolulu

6:393-482 (July-Aug.) 1947

Thirty Years' Experience with Coronary Artery Disease. C. C. Sturgis.—p. 393.
*Asthma in the Newborn, or, "Doctor—is it Thymus?" F. D. Nance.—p. 400.
Rh Factor. A Review. L. E. Mermod.—p. 402.
Echinococcus Cyst of Lung. F. L. Giles.—p. 405.
Hearing Defects in Schools. H. E. Crawford.—p. 410.

Asthma in the Newborn.—Nance reports 7 cases, which came under his observation and which illustrate the following points: 1. Asthma in the newborn is not uncommon, but is probably the most frequent cause of a wheeze in these infants. 2. It is almost always dietary in origin. 3. Since the diet at this age is extremely limited, the detection of the offending food is simple. The author concludes that the history that an infant wheezed since birth plus the finding of an expiratory wheeze should suggest a probable diagnosis of asthma due to food allergy. Physicians should be unwilling to accept a diagnosis of thymus enlargement as the cause of noisy respiration in the newborn on the basis of roentgen observations alone.

Journal of Bone and Joint Surgery, Boston

29:553-838 (July) 1947. Partial Index

Flexor-Tendon Grafts to the Finger and Thumb. W. C. Graham.—p. 553.
Tendinous Reconstruction of Hand Following Irreparable Injury to Peripheral Nerves and Brachial Plexus. C. A. Luckey and S. R. McPherson.—p. 560.
Reconstruction of Defects of Tibia and Femur with Apposing Massive Grafts from Affected Bone. J. J. Flanagan and H. S. Burem.—p. 587.
Calcified Medullary Defects in Bone. A. B. Ferguson.—p. 598.
*Immobilization with Bone Grafts in Treatment of Tuberculosis of Joints and Pott's Disease. E. Sorrel and Madame Sorrel-Dejerine.—p. 603.
Functional Aspects of Abductor Muscles of Hip. V. T. Inman.—p. 607.
*Use of Homogenous Bone Grafts: Preliminary Report on Bone Bank. L. F. Bush.—p. 620.
Repair of Defects of Radius with Fibular Bone Grafts. R. C. Miller and G. S. Phalen.—p. 629.
Operative Treatment of Paralytic Genu Recurvatum. C. H. Heyman.—p. 644.
*Use of Absorbable Substances to Obliterate Bone Cavities and as Hemostatic Agents in Operative Procedures on Bones and Joints. J. Buchman and J. E. Blair.—p. 650.
Experiences with Epiphyseal Arrest in Correcting Discrepancies in Length of Lower Extremities in Infantile Paralysis: Method of Predicting Effect. W. T. Green and Margaret Anderson.—p. 659.
Posterolateral Approach to Femur. G. H. Marcy.—p. 676.
Arthrodesis of Hip Joint in Degenerative Arthritis: Modified One-Stage Procedure with Internal Fixation. J. A. Dickson and L. J. Willien.—p. 687.
Osteochondritis Dissecans of Talus. R. B. Ray and E. J. Coughlin.—p. 697.
Oblique Subcervical (Reverse Intertrochanteric) Fractures of the Femur. L. T. Wright.—p. 707.
*Arthroplasty of Hip for Congenital Dislocation in Children. P. C. Colonna.—p. 711.
Metacarpal Reconstruction. J. W. Littler.—p. 723.
Primary Arterial Injury Complicating Extremity Fractures. D. W. Hedrick, F. B. Hawkins and C. O. Townley.—p. 738.
Operation for Old Unreduced Bennett's Fracture. J. R. Vasko.—p. 753.

Bone Grafts in Tuberculosis of Joints and in Pott's Disease.—Sorrel and Sorrel-Dejerine evaluate the use of bone grafts for immobilization in the treatment of Pott's disease and tuberculosis of the joints on the basis of their experience with bone grafting. They have gained the impression that among adolescents, adults and aged persons immobilization grafts have been of great help in the treatment of tuberculosis of the joints; and that in two of its most frequent and most severe localizations, in the spine and the hip, end results have been greatly improved by bone grafts. Among children the use of grafts has brought only slight modifications in the treatment of Pott's disease and tuberculosis of the joints. However, in the sequelae of hip disease these immobilization grafts have been found to be extremely useful.

Bone Bank for Homogenous Bone Grafts.—Macewen reported the first successful transplantation of bone from one person to another in 1878, but the use of homogenous bone transplants has received only casual notice. The fate of homogenous bone transplants was uncertain and the preservation and availability of such tissue has been an obstacle. Bush reviews the literature and reports results of bone homografts in 67 operations. He stresses that homogenous bone may be used as a transplant under the same conditions as, or in conjunction with, autogenous bone. The blood type has no influence on the successful use of homogenous grafts of bone, nor does the Rh factor influence the results. Bone may be stored in sealed containers at from 2 to 5 C. for periods up to three weeks. Bone may be preserved in sealed containers in the deep freezer at approximately —25 C. for an indefinite period. Microscopic studies of bone removed from fused areas in which homogenous bone had been used showed the grafts to be dead but surrounded by connective tissue undergoing metaplasia and new-bone formation. The success of homografts of bone has been shown by clinical results, by direct inspection of the fused area and by roentgenographs. Homografts of bone, available in a bone bank, will eliminate a second operation on a normal ilium or tibia, with its possible complications, and will shorten the time of operation and hospitalization.

Absorbable Substances to Obliterate Bone Cavities.—According to Buchman and Blair the treatment of chronic osteomyelitis by saucerization and primary closure of the wound under antibiotic influences has brought with it the problem of control of the hematoma which develops in the resultant bone cavity. The use of intramuscular injections of penicillin before and after the operative procedure and of local applications of penicillin before closure of the operative wound, without drainage, has been found to control infection, provided that the procedure has been sufficiently thorough, until the hematoma becomes adequately organized to resist infection. If the hematoma is too large to be organized rapidly, a sinus results. This reestablishes the cavity and exposes the operative site to reinfection from without, with resultant delay or failure of healing. The authors used absorbable gauze and absorbable gelatin ("gelfoam") in an attempt to fill the bone cavity and to control the continued oozing from the operative site. These substances were left in the wound to be absorbed by the tissues and also served as vehicles for penicillin. In some instances "gelfoam" was used as a partial filler of the cavity in conjunction with thrombin to control the oozing and with penicillin to control the infection. The use of oxidized gauze or absorbable gelatin as a vehicle for thrombin and penicillin in filling dead spaces or bone cavities appeared to be inadvisable because of many complications interfering with the healing of surgical wounds by first intention. The use of oxidized gauze or absorbable gelatin with thrombin as hemostatic agents in the presence of troublesome oozing and bleeding is advisable, and at times invaluable, notwithstanding the fact that the final healing of the wound may be delayed, in a considerable proportion of instances, by temporary partial disruption incidental to the evacuation of collections of blood and serum.

Arthroplasty for Congenital Dislocation of Hip in Children.—Colonna reports end results of an arthroplasty procedure devised some years ago for the treatment of congenital dislocation of the hip. From his follow-up study of ten to thirteen years he arrived at the following conclusions: 1. The two stage procedure in the younger age group is permanently effective in providing accurate reduction, stability and an excellent range of mobility. 2. Careful attention to details is essential not only in the first and second stages of the operation but also in the early part of the postoperative period. 3. The results have been better with the unilateral than with the bilateral dislocation. 4. The procedure is not to be employed in children beyond the age of 10 years; the best results have been obtained in children under 8 years of age.

J. Neuropathology & Exper. Neurology, Baltimore

6:217-310 (July) 1947

Cranial Trauma and Extrapyramidal Involvement: Cerebral Changes Simulating Those of Anoxia: Clinicopathologic Report of 3 Cases. N. Malamud and W. Haymaker.—p. 217.
Lesions of White Matter of Central Nervous System. M. Scheinker.—p. 227.
Infantile Cerebral Palsy of Hemiplegic Type: Case with Pyramidal and Somaesthetic Deficit. J. W. Papez and A. R. Vonderahe.—p. 244.
Chronic Lymphocytic Choriomeningitis. A. B. Baker.—p. 253.
*Plasmocytoma of Hypothalamus: Clinical-Pathological Report of a Case. J. D. French.—p. 265.
*Fatal Poisoning by Lead Benzine (Clinico-Pathologic Study). L. Bini and G. Bollea.—p. 271.
*Primary Glioblastoma Multiforme of Cerebellum: Report of a Case. C. B. Powell.—p. 279.
Traumatic Dissecting Aneurysm of Left Internal Carotid Anterior Cerebral and Middle Cerebral Arteries. H. M. Dratz and B. Woodhall.—p. 286.
Sodium Cyanide: Sequence of Changes of Activity Induced at Various Levels of Central Nervous System. A. A. Ward Jr. and M. D. Wheatley.—p. 292.
Mechanism of Cerebral Death with Doses of NaCN from Which the Heart Recovers. M. D. Wheatley.—p. 295.
Rapid Staining Procedures for Paraffin Sections of Formalin Fixed Nervous Tissue. D. E. Fletcher.—p. 299.

Plasmacytoma of Hypothalamus.—Plasma cell tumors are usually multiple, occurring in bone. Instances of single plasmacytomas of soft tissue have been reported. Sites most commonly involved are the nasopharynx or conjunctiva. In no instance did the tumor arise primarily in the central nervous system. The case reported by French represents such a primary involvement of the central nervous system, the single lesion being found at necropsy in the hypothalamus. The case was that of a woman aged 42. The microscopic appearance of the hypothalamic mass was quite at variance with that anticipated from gross inspection of the sagittally sectioned brain. The expected glial tumor did not materialize. Infection and hemorrhage clouded the microscopic appearance of the area so that the origin and true nature of the mass was obscured. The neoplastic rather than inflammatory nature of the plasma cell accumulation was indicated by the well localized arrangement of the cells. The site of the tumor was the most unusual aspect of the case. It must be considered as a single extramedullary plasmacytoma and not a metastasis, in view of the absence of other foci.

Fatal Poisoning by Lead Benzine.—Bini and Bollea describe microscopic and histochemical observations in 2 cases of fatal poisoning by tetraethyl lead. The question is raised as to whether tetraethyl lead exerts its lethal action on the nervous system through the metal combined with organic radicals or through its ethylic radical alone. The authors consider that their inability to demonstrate lead in the nervous system of their 2 patients in the presence of a clinical and histologic picture reminiscent of alcohol intoxication, suggests that at least in these cases the cause of the toxic action was not lead but the tetraethylic radical.

Primary Glioblastoma Multiforme of Cerebellum.—Powell states that cross section of a glioblastoma is characterized on gross inspection by a variegated display of colors; numerous areas of degeneration, hemorrhage and, frequently, small cysts; and tremendous edema and distortion, resulting in flattened and pale, sometimes translucent, convolutions. The aptly descriptive name, glioblastoma multiforme, may be appreciated when the tumor is examined microscopically and the confusing series of cellular forms and appearances are revealed. The multiformity of cell type on one hand and the extensive vascular phenomena and areas of necrosis on the other are perhaps the most typical observations. The author reports a verified instance of this tumor arising as a primary and isolated neoplasm of the cerebellum. Only 3 instances of primary glioblastoma multiforme of the cerebellum of reasonable certainty can be found in the literature. Two additional cases are doubtful, 1 because of an incomplete specimen and 1 because of possible misinterpretation of direct tumor extension into adjacent areas. Seven other cases are included as possible instances, although each is considered improbable. Thus primary glioblastoma multiforme of the cerebellum appears to be a rarity. The significance of the fact that this most commonly observed form of glioma does not appear in the cerebellum is unknown.

New York State Journal of Medicine, New York

47:1535-1630 (July 15) 1947

SYMPOSIUM ON EASTERN ROCKY MOUNTAIN SPOTTED FEVER

Introduction. S. Krech.—p. 1579.
Case Reports. H. B. Rubler.—p. 1579.
Clinical Experiences in Eastern Spotted Fever. L. B. Davis.—p. 1581.
Epidemiology of Rocky Mountain Spotted Fever. N. H. Topping.—p. 1585.
Diagnostic Aids in Rocky Mountain Spotted Fever. G. R. Cox.—p. 1587.
Vaccine Prophylaxis of Rocky Mountain Spotted Fever. C. C. Shepard.—p. 1589.
Pathologic Changes in Rocky Mountain Spotted Fever. W. W. Brandes.—p. 1590.
Insect Vectors of Rocky Mountain Spotted Fever on Long Island. J. K. Miller.—p. 1592.
State Science Service and Spotted Fever Problem on Long Island. R. D. Glasgow.—p. 1595.
Public Health Aspects of Rocky Mountain Spotted Fever. A. T. Davis.—p. 1596.
Benadryl: Technic for Its Administration. H. Reinstein and T. H. McGavack.—p. 1601.
Use of Penicillin in Surgical Infections: Note of Warning. J. H. Garlock.—p. 1604.
Use of Fibrin Foam in Gallbladder Fossa Following Cholecystectomy. B. J. Ficarra and J. Lionello.—p. 1606.

Radiology, Syracuse, N. Y.

49:1-130 (July) 1947

Pathology of Rheumatic Diseases. D. M. Angevine.—p. 1.
Roentgen Diagnostic Aspects of Chronic Arthritis and Bursitis. L. W. Paul and W. W. Moir.—p. 6.
*Roentgen Therapy in Arthritis, Bursitis and Allied Conditions. E. A. Pohle and J. A. Morton.—p. 19.
Roentgen Diagnosis of Pigmented Villonodular Synovitis and Synovial Sarcoma of Knee Joint: Preliminary Report. R. W. Lewis.—p. 26.
*Appendical Coproliths: Their Surgical Importance. S. F. Thomas.—p. 39.
Problems in Diagnosis of Cancer of Colon. K. S. Davis and W. H. Daniel.—p. 50.
Effects of Estrogenic Therapy on Osseous Metastases from Carcinoma of Prostate. W. C. MacCarty Jr.—p. 54.
Irradiation of Experimental Cerebral Tumors: I. Experimental Production of Brain Tumors in Mice. II. Observations on Effect of X-Radiation on Experimental Gliomata in Mice. Katharine Tansley and C. W. Wilson.—p. 62.
Osteochondritis Dissecans of Ankle, with Reports of 4 Proved Cases. C. E. Vaughan and J. P. Stapleton.—p. 72.
Rupture of Small Intestine Complicating Injury of Pelvis: Report of 2 Cases with Recovery After Delayed Diagnosis and Operation. D. A. Sampson and H. M. Stauffer.—p. 80.
Adrenal Tumor of Liver in Child: Case Report with Roentgenologic Features. H. Seltz.—p. 86.
Characteristics of X-Ray Films and Screens. R. H. Morgan.—p. 90.
Elastic Ruler for Roentgen Pelvimetry. C. Gianturco.—p. 95.

Roentgen Therapy in Arthritis and Bursitis.—Pohle and Morton employed roentgen radiation in the treatment of 100 patients with osteoarthritis and 69 patients with bursitis in the department of radiology, state of Wisconsin General Hospital. Most patients received one series of treatments, but about 40 per cent had two series and a small number three. Satisfactory relief from pain was obtained in approximately 74 patients with osteoarthritis; the corresponding figure for bursitis was 57. No theory as to the mechanism of the therapeutic effect is offered; it may be based on a nonspecific analgesic action of the roentgen rays.

Appendical Coproliths.—Thomas reports the occurrence of appendical coproliths in 6 patients between the ages of 6 and 56 years. Hypertrophy of the muscle wall of the appendix was observed in 5 of the cases. This may be the mechanism of the intermittent colic, the history of which can be elicited after the presence of the calculus is discovered. The amount of calcium and the degree of hardness of the calculus depend on the age of the fecalith. One of the four largest coproliths yet reported, 3 by 1.5 cm., is included in this small series. When the diagnosis of "chronic appendicitis" is entertained, a roentgenogram of the abdomen with the patient supine should be made to rule out the possibility of a calcified appendical coprolith. The diagnosis of chronic appendicitis is impossible roentgenographically. It is only inferred that when a clearcut history fits with roentgenographic diagnosis of an appendical coprolith, intervention for chronic, recurring appendicitis will yield benefits.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Ophthalmology, London

31:449-516 (Aug.) 1947

*Effect of Aluminum and Its Alloys on Eye. L. H. Savin.—p. 449.

Effect of Aluminum and Its Alloys on the Eye.—Savin reports a case in which a piece of aluminum zinc was observed over a period of three years as it lay on the retina of an only eye. The metal was at first bright and silvery. Later it became coated with a white cover probably of aluminum hydroxide. The fragment shifted twice, each time leaving a retinal imprint, before it eventually disintegrated into white powder. In a second case the metal behaved similarly. Twenty-five implantations of aluminum and aluminum alloy fragments were made into the anterior chambers of the eyes of rabbits and 9 into the vitreous chambers. General effects on the eye included lens opacities, striae, dots, vacuoles and irregular opacities. Inflammatory changes in the uveal tract were frequent. Other changes included fundus pigmentation, localized choroiditis and retinitis proliferans. On the basis of clinical and experimental evidence it is concluded that the eye is by no means inert to aluminum.

British Medical Journal, London

2:83-116 (July 19) 1947

Some Aspects of Human Infertility. A. Sharman.—p. 83.
Lymph-Gland Biopsies for Suspected Bone and Joint Tuberculosis: Analysis of 100 Consecutive Cases. G P. Arden and J. C. Scott. —p. 87.
*Treatment of Inevitable, Incomplete, and Septic Abortion: Analysis of 600 Consecutive Cases. J. McD. Corston and J. Stallworthy.—p. 89.
Work of a Tuberculosis Contact Clinic for Young Children, 1941-5. F. J. W. Miller.—p. 91.
Rhabdomyosarcoma Causing Acute Retention in Infants. E. Minchin. —p. 94.

Treatment of Abortion.—Corston and Stallworthy instituted an interventionist attitude in cases of inevitable and incomplete abortion. After the vulva and vagina had been swabbed, the surgeon examined the pelvis to determine the position of the uterus and the state of the cervix in order to avoid perforation by dilators or forceps. If the canal was patulous and placental tissue was in reach it was removed. If not, the cervix was exposed and an oxytocic drug was injected under vision into the cleaned cervix. Unless it was already patulous the cervical canal was dilated to the size of a no. 14 or 16 Hegar dilator. Sponge forceps were introduced, opened, rotated through 90 degrees, closed and withdrawn. This was repeated until no further pieces of placental tissue were removed. Then the cavity was explored with a flushing curet and packed with a sterile gauze roll, which was removed six hours later. In septic cases this pack was impregnated with sulfathiazole powder. This method has been employed in 600 cases of abortion, in 42 of which there was infection on admission. In the cases with infection chemotherapy was started before the uterus was evacuated. There was 1 death in this series. The authors conclude that surgical evacuation of the uterus, if carefully performed, is safe and efficient. The length of stay in the hospital is reduced by this method. The low mortality is attributed to the fact that a team skilled in handling these cases was responsible for them.

Lancet, London

2:79-118 (July 19) 1947

Education of Psychiatrists. A. Lewis.—p. 79.
*Vagal Resection in Treatment of Duodenal Ulcer. I. M. Orr and H. D. Johnson.—p. 84.
*Clinical Thermometers as Possible Source of Cross Infection in Hospital. J. B. M. Green and J. B. Penfold.—p. 89.
Hormonal Treatment of Deficient Lactation: Results with Crude Anterior Pituitary Extract. Margaret Robinson.—p. 90.
Swallowed Pin Retained in Appendix. J. Scholefield.—p. 92.

Vagal Resection in Treatment of Duodenal Ulcer.—According to Orr and Johnson the incidence of chronic and recurrent ulceration is increasing and presents a serious problem. Although 80 per cent of ulcers can be healed medically, 65 per cent of the patients have a recurrence within two years. The risk of complications is considerable, since 1 in 4 or 5 patients have serious hemorrhage or perforation while still young. Gastrojejunostomy is a failure as a routine procedure. It carries a mortality of about 2 per cent and does not cure more than half of the patients. Gastrectomy is more successful if it is sufficiently radical, but it is also more dangerous. The operative mortality may be 5 per cent and the recurrent ulceration rate from 2 to 9 per cent. A further percentage is not freed from symptoms and new symptoms may result from the operation itself. Incomplete vagal resection gives poor results. The insulin test is helpful in differentiating complete from partial vagotomies. The authors have done fifty vagotomies or vagal resections in the last two years without a death. The long term results of vagal resection are not yet known, but little is lost if, on occasion, it fails, for a gastrectomy is still possible. A lasting success by vagal resection is a triumph of physiologic strategy, and failure does not spell disaster.

Clinical Thermometers as Source of Cross Infection.—Green and Penfold outline the procedures usually employed in taking temperatures in hospital wards and show that these procedures not only are unsound but may be dangerous. The thermometers remain in the sterilizing fluid only a few seconds between one patient and the next. While some antiseptics are bactericidal in a few seconds, these would almost certainly be harmful to the mucosa of the mouth. The use of inefficient antiseptics gives a false feeling of security. The authors suggest that each patient be supplied with a thermometer which he keeps to himself as long as he stays in the hospital. It can be left by the patient's bed in a small jar containing an antiseptic solution. When the patient leaves the hospital, this thermometer must be properly sterilized before being used again. This can be done by washing the thermometer in running cold water, drying it and placing it long enough in some effective antiseptic.

Medical Journal of Australia, Sydney

1:773-804 (June 28) 1947

Observations on 104 Cases of Anterior Poliomyelitis Treated in South Australia. E. F. West and Lois H. Davison.—p. 773.
*Further Observations on Dental Defects in Infants Subsequent to Maternal Rubella During Pregnancy. M. W. Evans.—p. 780.
Comparison of Ointment "Aerosol 5" with Number 5 Against Lewisite. E. R. Trethewie.—p. 785.

Dental Defects in Infants After Maternal Rubella.—Of 67 children born to mothers who had rubella during pregnancy, 30 exhibited congenital dental abnormalities, in 20 cases major in degree. Caries was disregarded in this calculation. If caries and restricted arch formation are taken into account, the abnormalities are detectable in 46 of the children. With the exception of 5, the remainder of the infants show other concongenital malformation. The main abnormalities occurred in the children of mothers who had contracted rubella during the first three months of pregnancy; in the "later pregnancy" group the abnormalities were few in number and minor in degree. The main dental abnormalities comprised retardation of eruption, dental caries and hypoplasia of enamel. Three cases of congenital absence of isolated deciduous teeth and 4 of premature eruption of permanent teeth are recorded.

Tubercle, London

28:107-128 (June) 1947

*Survival of Sputum-Positive Consumptives: Study of 1,192 Cases in a County Borough Between 1914 and 1940. W. H. Tattersall.—p. 107.
Fulminant Tuberculous Septicemia and other Atypical Forms of Abdominal Tuberculosis. E. J. Blair and W. Pagel.—p. 115.

28:129-152 (July) 1947

Tuberculosis Among the Gurkhas. J. Aspin.—p. 129.
Management of Tuberculous Empyema. A. J. Coello.—p. 136.
Cavitation in Pulmonary Tuberculosis. R. Grenville-Mathers.—p. 139.
Particular Type of Tuberculous Pulmonary Cavitation Tending to Spontaneous Healing. L. Dunner.—p. 144.

Survival of Sputum-Positive Consumptives.—The material reviewed by Tattersall comprises 1,192 patients with positive sputum that were given diagnosis between 1914 and 1940. Five per cent of the patients were lost sight of. No difference in prognosis in respect of age or sex is disclosed for adults, but adolescent males are found to have better prospects of survival than adolescent females. No difference in survival is proved for successive quinquennial periods. In 32 per cent of the standard 1,000 cases patients survive five years. In 22 per cent they survive ten years. After a five year survival there is a 50:50 chance of surviving a further fifteen years. After ten years, there is a *2:1* chance of surviving a further ten years. Differences in the survival of patients experiencing treatment in sanatoriums and patients not doing so appear to be transient only. The clinical features for patients surviving longest show no consistent resemblance to one another.

Acta Radiologica, Stockholm

28:110-185 (April 30) 1947. **Partial Index**

Radiation Thrombocytopenia. H. Mossberg.—p. 110.
Spontaneous Chronic Intestinal Invagination in Adults. P. B. Hansen.—p. 115.
Hyperostosis Cranii. T. Denstad.—p. 129.
*Changes in the Lungs in 126 Cases of Asbestosis Observed in Finland. C. Wegelius.—p. 139.
*Preoperative Roentgen Treatment in Breast Cancer. S. Kaae.—p. 153.
Further Development of the Theory of Biologic Reactions Caused by Roentgen Rays. J. T. van der Werff.—p. 169.
Diagnosis of Ectopic Pregnancy by Hysterosalpingography. B. Nielsen.—p. 185.

Changes in the Lungs in Asbestosis.—Wegelius describes observations on 126 cases of asbestosis among 476 workers of the Finska Mineral Company. The patients presented roentgenologic signs of asbestosis; 94 had a mild form, 23 a moderate form and 9 an advanced form of the disease. The roentgenologic changes in the lung are the most important diagnostic criteria. Various stages of asbestosis can be differentiated roentgenologically. In the classification of his material Wegelius followed Saupe's rather than Shull's method. Uncomplicated cases of pure asbestosis usually corresponded to stages 1 and 2. Moderately severe cases with emphysema and thickening of the pleura and pericardium were extremely common, and the roentgenographic changes were usually those of stages 2 and 3. Cardiac enlargement was less frequent in the author's material than the literature indicates. The rather high percentage of advanced cases (compared with statistics from other countries) is probably due to the fact that this industrial disease has only rather recently been given the attention it deserves. Now that careful supervision is exercised the high figures for more advanced stages will presumably be reduced.

Preoperative Roentgen Treatment in Cancer of the Breast.—Kaae evaluates the results obtained at the Radium Center in Copenhagen in 301 cases of cancer of the breast. Treatment by radical surgical intervention either followed or preceded roentgen therapy. The patients were observed for from two to thirteen years, 137 of them five years or more. Wegelius divides the cases into two groups. Stage 1 comprises those in which cancer was present only in the breast, stage 2 those in which the axillary lymph nodes were involved. The method of roentgen treatment varied. Prior to June 1, 1938 a moderate preoperative treatment was given, supplemented by a lesser postoperative radiation; after that time only a strong preoperative roentgen treatment was given. Preoperative irradiation seems to improve the results. The frequency of distant metastases was the same in the preoperatively and the postoperatively irradiated group, whereas the frequency of local recurrence was so much greater in the postoperatively treated patients that it may perhaps explain the better results in the preoperatively treated group.

Annales Paediatrici, Basel

168:289-348 (June) 1947

*Infections with Influenza Bacilli and Penicillin (Meningitis, Empyema, Osteomyelitis). W. Hirsch and E. Nassau.—p. 289.
Erythema Annulare Lehndorff-Leiner Without Other Rheumatic Manifestations. W. Winkler.—p. 303.
Significance of Perforation of Bronchus in Tuberculosis of Endothoracic *Lymph Nodes.* O. Görgényi-Göttche and D. Kassay.—p. 311.

Penicillin in Influenzal Meningitis Empyema and Osteomyelitis—Hirsch and Nassau used penicillin treatment in 3 cases of meningitis, 2 of empyema and 1 of osteomyelitis, all caused by influenza bacilli and all affecting young children. The treatment with penicillin was successful. The authors suggest the following general directives for the treatment of purulent infections caused by strains of influenza bacilli sensitive to penicillin. Whenever suppurating meningitis, pleural empyema or osteomyelitis develops in a young child or nursling, penicillin should at once be given intraspinally or into the pleura or muscle until the type of pathogenic organism and its sensitivity to penicillin has been established. The results of these tests determine whether penicillin therapy should be continued. Hirsch and Nassau found that in empyema and in osteomyelitis treatment with penicillin was adequate, provided it was administered in sufficiently large doses. The combined administration of penicillin and sulfadiazine appears to be the method of choice in treatment of influenzal meningitis.

Archivio di Antropologia Criminale etc., Turin

67:1-138 (Jan.-June) 1947. **Partial Index**

*Acute Barium Poisoning. R. Gilli.—p. 24.

Acute Barium Poisoning.—Acute poisoning with barium is rare. One hundred and forty-two cases are reported in the literature. Gilli reports the case of a woman aged 28 who was given erroneously a solution containing 30 Gm. of barium chloride instead of sodium sulfate. The patient took only half of the dose when she manifested symptoms of acute poisoning, abdominal cramps and vomiting followed by paralysis and asphyxia. Lavage of the stomach, hypodermic injection of 1 mg. of atropine sulfate, lobeline and other measures failed. Death occurred within nineteen hours. The author observed at necropsy two lesions of medicolegal value in the anatomicopathologic diagnosis of barium poisoning, namely, lesions of the nerve cells of the brain and brown granulations in the renal tubules, the seat of acute lesions.

Deutsche medizinische Wochenschrift, Stuttgart

72:241-272 (May 16) 1947. **Partial Index**

Symptomatology of So-Called Alimentary Intoxications. H. Kleinschmidt.—p. 241.
Etiology of Epidemic Diarrhea in Summer of 1945. K. Nitsch.—p. 244.
*Macrocytic and Megalocytic Anemia in Hunger Edema. E. Koch and P. Lübbers.—p. 254.
Improved Method of Percutaneous Arteriography. Brobeil.—p. 257.

Macrocytic and Megalocytic Anemia in Presence of Edema.—Koch and Lübbers discuss the special forms of anemia that appear in the presence of hunger edema on the basis of observations on 15 cases. The anemias were usually hyperchromic, macrocytic and nonhemolytic (13 cases). In 12 patients the anemia was megalocytic, that is, it resulted from a disturbance in the regeneration of the erythrocytes and was accompanied by increased hemolysis. In both forms Castle's intrinsic factor was demonstrable in the gastric juice, and both forms were characterized by their rapid reaction to liver extracts and autolyzed yeast. The authors think that the etiologic factor is a food deficiency, probably of the vitamin B_2 complex.

Schweizerische *Zeitschrift für* Tuberkulose, *Basel*

4:197-336 (No. 4) 1947. **Partial Index**

*Tuberculous Endocarditis and Congenital Pulmonary Tuberculosis. M. Aufdermaur.—p. 199.
Morbus Boeck with Transition into Ordinary Tuberculosis. E. Bachmann.—p. 210.
Spontaneous Pneumothorax in Besnier-Boeck-Schaumann's Disease. M. Dressler.—p. 229.
Seasonal Influences on Mortality of Pulmonary Tuberculosis and Several Important Groups of Diseases. A. Essellier and W. Kalt.—p. 237.
Regression in Roentgenologic Picture of Micronodular Lesions of Lungs. R. Jeanneret and P. Siegrist.—p. 247.
Performance Tests in Evaluation of Patients with Silicosis. F. Lang.—p. 257.
*Sedimentation Rate of Erythrocytes and Tuberculosis. P. M. Steiner.—p. 297.

Tuberculous Endocarditis and Congenital Pulmonary Tuberculosis.—Aufdermaur describes the occurrence of late pulmonary primary infection with transition into general miliary tuberculosis and tuberculous endocarditis of the chordae tendineae of the tricuspid valve and tuberculous endometritis in a woman aged 26. Hematogenous tuberculosis developed during pregnancy. The infant died on the twenty-fifth day of life as the result of a disseminated primary tuberculosis of the lungs, which resulted from aspiration of amniotic fluid containing bacilli. The author discusses the pathogenesis of tuberculous endocarditis and thromboarteritis and compares the evolution of primary infection in mother and child.

Erythrocyte Sedimentation and Tuberculosis.—Steiner shows that, if the sedimentation speed of the erythrocytes is determined with an exact technic and at carefully chosen times and intervals, the plotted curve of the sedimentation rate permits conclusions with regard to diagnosis and prognosis, and it may be a guide to the proper treatment.

Book Notices

Cancer: Diagnosis, Treatment, and Prognosis. By Lauren V. Ackerman, M.D., Pathologist to the Ellis Fischel State Cancer Hospital, Columbia, Mo., and Juan A. del Regato, M.D., Radiotherapist to the Ellis Fischel State Cancer Hospital. Cloth. Price, $20. Pp. 1115, with 715 illustrations. The C. V. Mosby Company, 3207 Washington Blvd., St. Louis 3, 1947.

The first part (one hundred and twenty-five pages) treats of cancer in general. After the introduction comes an excellent review by M. B. Shimkin of the National Cancer Institute of the methods, results and prospects of experimental cancer research. This is followed by chapters on the pathology of cancer and on its treatment. The physics of radiation, its effects on normal tissues and on cancer, the indications for radiotherapy of cancer—the current methods and the clinical control—are described clearly and constructively. The pathologist is reminded that it is now outside his province to decide on the radiosensitivity of cancer on the basis of microscopic structure. While surgical intervention remains the only hope of cure in many forms of cancer, "the day is past when a surgeon can be considered competent simply because he is technically capable of carrying an operation to completion. The cancer surgeon must be pathologist, amateur physicist (and radiotherapist), physiologist and statistician, as well as surgeon and philosopher." With the necessary changes in the words this statement applies also to the radiotherapeutist. It is noteworthy, too, that by cancer research the authors understand "not only laboratory experimentation, but the clinical study of the disease, the constant improvement of the methods of treatment, and the statistical research which this may imply." The book is dominated by the spirit of an advancing cancerology. The other fifteen chapters, some nine hundred and fifty pages, deal with cancer in the different parts of the body except the central nervous system, beginning with cancer of the skin. The chapter on cancer of the respiratory and upper digestive tracts is the longest; next comes that on the rest of the digestive tract, and then that of the female genital tract. Each chapter and subsection follows the same sequence, namely, anatomy, the incidence of cancer and etiology, pathology, clinical evolution, diagnosis, treatment and prognosis. References to articles quoted in the text are listed at the ends of the chapters. The treatment of present choice is indicated in each case but without bias and without details of interest mainly to the trained specialist. The structure of the cancers is clearly described and well illustrated, the naked-eye appearances abundantly so. The number of pictures of cancer of the skin and the lip could be reduced without any loss of clarification of the text. There are seventy-six informative tabulations of significant cancer data of various kinds. Of much interest are the outline sketches of anatomic relations at cancer sites, and especially of the course and distribution of the lymphatics concerned in the metastasis of cancer. The book is well indexed by authors and by subjects. Throughout the book "cancer" is used freely in place of "malignant disease" or "malignant tumor," but "cancerous" could have been used more often than it is in place of "malignant" in the sense of cancerous. One wonders how it happens that a new word, not in our dictionaries, namely "exophytic," is used to describe certain cancers of the lips and elsewhere. Another apparently new word in cancer lingo is "semimalignant," used in discussing mixed tumors of the salivary gland type. The existence of alveolar carcinoma of the lungs is taken for granted without any reference to the claims of anatomists that there are no cells lining the alveolar walls. But these are not important matters of immediate practical significance. The book gives a good, reliable, comprehensive account of the present knowledge of human cancer as a practical problem. It will be of great help to the clinician and the student. The Ellis K. Fischel State Cancer Hospital at Columbia, Mo., may well rejoice that its rich material has been put to such good use by members of its staff in writing a first class textbook on cancer.

Lebendige Gewebelehre: Eine Histophysiologie auf neuer Grundlage. Von Dr. med. et phil. Paul Vonwiller, Assistenzarzt an der kantonalen Heil- und Pflegeanstalt in Rheinau (Kanton Zürich, Schweiz). Paper. Pp. 241, with 26 illustrations. Kommissionsverlag Zollikofer & Co., St. Gallen, 1945.

This monograph was written in Moscow, Russia, in 1938-1939; most of the early work was done with the help of Russian assistants. As the title indicates, the present volume deals with microscopic study of living tissues in contrast to the classical method of fixing, staining and mounting thin sections of dead tissues, to which the author alludes in his introductory chapter. Throughout the monograph the author points out that he and his collaborators studied microscopically only living organs "in vivo et in situ."

The material for study consisted chiefly of anesthetized frogs, rats and rabbits, as well as plants. The method of study with high-powered, specially constructed microscopes allowed even the use of oil immersion lenses on otherwise opaque organs whose blood supply was intact. The details of these instruments as well as the micromanipulators (used over twenty years) will be described in a separate volume.

The organs and tissues chiefly studied "in vivo et in situ" comprise the eye (Gullstrand's slit lamp), skin with its capillaries, lymphatics, thyroid gland, kidney, and, with dyes, the capillary permeability, peripheral nerve and single nerve fiber, the nerve nets of the stomach, the olfactory lobe and nerve, the brain and the movements of the cerebrospinal fluid observed through the covering of the fourth ventricle. Observations of this latter assured him that there occurs a continuous movement of the fluid both cephalad and caudad (a sort of circulation). Injection of dilute methylene blue into the circulation while studying the cells of the thyroid gland revealed only a rather permanent blue coloration of the colloid, whereas the methylene blue in the rest of the tissue of the animal (frog) was rather promptly converted into the leukobase (methylene white).

The book constitutes essentially a résumé of the work on vital microscopy done over the past twenty years by the author and pupils (62 references). Dr. Knisely's work is only casually mentioned twice (pp. 31 and 162) and Markee's work not at all. Neither does the bibliography contain a reference to either of these two American investigators, who have worked in this field for about an equally long period of time.

For much of the data one must refer to the author's original scientific contributions. It would appear that in its present state of development the research referred to in this book will be of interest solely to the anatomist, physiologist and pathologist, even though the author considers the material easily adaptable to clinical studies.

Tuberculosis Hospital Planning and Construction. By J. Bruno Basil. American Trudeau Society, Medical Section. Written under direction of Committee on Sanatorium Planning and Construction, American Trudeau Society. Paper. Price, $1. Pp. 81. National Tuberculosis Association, 1790 Broadway, New York 19, 1946.

In 1943 a Committee on Sanatorium Planning and Construction was formed by the Medical Section of the National Tuberculosis Association to rewrite the Manual on Sanatorium Planning originally prepared in 1929 and revised in 1939. The first phase of the committee's work was concerned with the collection of information on important trends and changes in sanatorium planning that have occurred in recent years in accordance with modern developments in the treatment and care of tuberculosis. This study led to the development of architectural plans for a 200 bed tuberculosis hospital as well as the publication of the present brochure, a correlative volume on tuberculosis hospital planning and construction. The new edition gives information on practically all phases of sanatorium planning, including the development of individual services and departments. It considers the factors involved in the organization of a hospital program, the selection of an appropriate site, the planning of administrative and general services, x-ray and laboratory facilities, medical and surgical needs, types of accommodations, outpatient requirements, dietary department, recreation and rehabilitation, auxiliary facilities, storage, housekeeping, laundry, mechanical services and power, electrical communications and fixtures, quarters for personnel and landscaping of hospital grounds. This book, representing as it does a careful study and analysis of the needs of sanatorium services, will be welcomed by medical and administrative personnel, boards of trustees, architects and all others directly concerned in the planning and organization of hospital facilities essential to the modern care and treatment of tuberculosis.

Pulmonary Tuberculosis: A Handbook for Students and Practitioners. By R. Y. Keers, M.D., M.R.C.P., F.R.F.P.S., Medical Director, Red Cross Sanatoria of Scotland, Tor-na-Dee, Milltimber, Aberdeenshire, Scotland, and B. G. Rigden, M.R.C.S., L.R.C.P., First Assistant Medical Officer, Red Cross Sanatoria of Scotland. With a foreward by F. H. Young, O.B.E., M.D., F.R.C.P., Medical Officer in charge of the Tuberculosis Dispensary, St. Bartholomew's Hospital, London. Second edition. Cloth. Price, 17s 6d. Pp. 277, with 124 illustrations. William Wood & Co., Mount Royal & Guilford Aves., Baltimore 2: E. & S. Livingstone, 16-17 Teviot Place, Edinburgh 1, 1946.

Although this is about the same size as the first edition, deletions have been made and replaced by new material. This handbook is intended primarily for students and practitioners of medicine. The first chapter consists of a historical sketch of the development of our knowledge of tuberculosis, followed by a chapter on bacteriology in which the tubercle bacillus is presented with reference to types, staining, culture and inoculation methods. Considerable space is devoted to an excellent presentation of the pathology of tuberculosis. Here all the important steps from the development of the primary lesion to fatal, acute and chronic forms of tuberculosis are presented.

Some controversial points are discussed under the subject of epidemiology and resistance in chapter four, for example the statement that greater resistance is present among those who react to tuberculin than among nonreactors. A number of workers will take issue with this statement and point out that the human body never tolerates tubercle bacilli as well as it does at the time of the initial infection. The statement to the effect that relatively few persons infected with tubercle bacilli contract clinical disease may be challenged by such persons as Bogen, who, in an article on "The Toll of Tuberculous Infection" concluded that as many as 50 per cent of infected persons may at some time have clinical lesions (*Am. Rev. Tuberc.* **42**:253 [Aug.] 1940).

The tuberculosis situation differs considerably from country to country and even in various parts of the same country. For example, under the heading Incidence of Infection attention is called to the high percentage of tuberculin reactors among children of such cities as London and Glasgow. Fifty-eight per cent of children between 10 and 15 years of age are infected in London and 45 per cent in Glasgow. This is in sharp contrast to the findings in cities of the United States, such as New York and Chicago, where the incidence of infection among high school students does not exceed 20 per cent, and in smaller cities from 6 to 15 per cent. As morbidity and mortality rates run parallel but on a lower level than the infection rate, one finds the lower morbidity and mortality in parts of the world where the infection rate is low.

The authors point out that there is no difference in the forms of pulmonary disease caused by the bovine and human types of tubercle bacilli, although the human type is responsible for the great majority of pulmonary lesions. Therefore it is felt that there is no great dissimilarity in the degree of virulence between the bovine and the human types of bacilli for human tissues.

Various diagnostic procedures are presented in a concise and clear manner. The authors state that "it is by virtue of its power in provoking the hypersensitive reaction in the infected body that tuberculin, by demonstrating that primary infection has occurred, is of such great value in diagnosis and in mass investigations." Chapter eight contains an excellent presentation of differential diagnosis. All the modern therapeutic procedures, including the more recent developments in chemotherapy, are presented.

The after-care and rehabilitation of tuberculous patients are given proper consideration. The final chapter consists of a discussion of tuberculosis as a national problem, and some valuable suggestions are offered for its solution.

1946-1947 The Hospital Purchasing File. Established 1919 as the Hospital Yearbook by the Modern Hospital Publishing Co., Inc. Twenty-fourth edition Boards. Various pagination. Purchasing Files, Inc., 919 N. Michigan Ave., Chicago 11, 1946.

This book, which is now in its twenty-fourth edition, continues as an excellent source of information and reference on hospital products and buying. It has an alphabetical list of manufacturers and distributors, a directory of 198 pages on hospital equipment and supplies, and a group of twenty-one manufacturers' catalogues covering administrative, dietary and housekeeping departments, laundry, building construction, maintenance and repair materials, plant operating equipment, professional services and facilities relating to surgery, obstetrics, anesthesiology, radiology, pathology, pharmacy, occupational therapy and physical therapy. Included also are special articles and plans with reference to administrative units, maintenance shops, boiler rooms, surgical units, central supply sections and the hospital pharmacy. The value of the book is further enhanced by an extensive check list of hospital equipment, directories of hospital associations, federal and other agencies serving the hospital and allied fields and the lists and references that have been included in relation to technical schools. As in previous years, this volume provides a vast amount of information of special interest to hospital executives and other personnel concerned in administrative functions of the hospital field.

Hospitals: Integrated Design. By Isadore Rosenfield. Progressive Architecture Library. Cloth. Price, $10.75. Pp. 308, with 264 illustrations. Reinhold Publishing Corporation, 330 W. 42d St., New York 18, 1947.

This book is based on lectures on hospital planning given under the joint auspices of the New York chapter of the American Institute of Architects and the Department of Public Works of New York City. It contains nineteen richly illustrated chapters giving a wealth of information on practically all phases of hospital planning and construction. There is an initial discussion of hospital needs as well as the integration of hospital services in a fully coordinated community plan. Then follow the general considerations of location, site, orientation, architectural planning and detailed analyses of individual departments, supplemented by numerous floor plans and other illustrative material. Careful consideration has been given to nursing units, diagnostic and therapeutic facilities, x-ray and laboratory services, surgical, obstetric and pediatric departments, outpatient requirements, administrative units and other service departments. Sections have also been included on hospital construction and costs, daylighting and artificial illumination, housing and training facilities, special hospitals and hospitals of limited size. The author with his wide experience in the field of hospital planning has presented a book that will be welcomed by all who are interested in the future planning and development of hospital facilities and services.

A Textbook on the Nursing and Diseases of Sick Children for Nurses. By various authors. Edited by Alan Moncrieff, M.D., F.R.C.P., Nuffield Professor of Child Health, University of London, London. Fourth edition. Cloth. Price, 30s. Pp. 744, with 154 illustrations. H. K. Lewis & Co., Ltd., 136 Gower St., London, W. C. 1, 1947.

The first part of this book discusses the general nursing care of the well and the sick child, together with several chapters devoted to general surgical nursing. The second part consists of a presentation of the diseases of children. One is amazed at the amount of information that has been gathered into this volume. There are no wasted words. Its clarity commends it to the nurse as a textbook during her period of training, and its completeness makes it a valuable work of reference when she has begun active work in her profession.

Bacteria in Relation to Domestic Science. By C. E. Dukes, M.D., M.Sc., D.P.H. Cloth. Price, $3.75. Pp. 240, with 10 illustrations. Oxford University Press, 114 5th Ave., New York 11; Amen House, Warwick Sq., London, E. C. 4, 1947.

The author has done a commendable job in presenting bacteriology in an interesting form to the student of domestic science. The activities of bacteria which are related to home life and especially to food are well covered. This book can be recommended for bacteriology courses in domestic science.

Queries and Minor Notes

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically stated in the reply. Anonymous communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

TREATMENT OF SCARLET FEVER

To the Editor:—What is the present day method of treating scarlet fever?

M.D., New York.

Answer.—Convalescent scarlet fever serum, scarlet fever antitoxin or penicillin may be used for the treatment of scarlet fever. The sulfonamides are probably not helpful in combating the toxemia of the disease. Nevertheless these drugs are of distinct value when complications develop, although it is doubtful that they prevent complications when used as a prophylactic.

Human convalescent scarlet fever is not plentiful now and therefore often difficult to obtain. Scarlet fever antitoxin may be secured from almost any drug store and is indicated particularly in overcoming the toxemia of scarlet fever but is seldom used to treat complications.

Although there does not seem to be any doubt that penicillin is an efficient remedy in the therapy of scarlet fever, its customary method of administration by intramuscular injection is a disadvantage in adopting it for general usage.

Bed rest for at least one week and an adequate amount of fluids are measures that should not be neglected.

Scarlet fever at the present time is a mild disease in this country.

LIVER FAILURE

To the Editor:—There is a tendency today to relate yellow atrophy of the liver to acute infectious hepatitis. I am referring to acute yellow atrophy attributed to arsphenamine and cinchophen. How does yellow atrophy which is observed now and then in pregnancy fit in this picture?

M.D., Ohio.

Answer.—The prevailing opinion regarding yellow atrophy of the liver is that it represents one variety of acute liver failure. From a clinical point of view it is a poor term because fatal acute liver failure may occur without much decrease in the liver size. Acute yellow atrophy may be produced by a massive insult from a single etiologic factor such as the virus of viral hepatitis or some hepatotoxin such as carbon tetrachloride or arsenic or, what is perhaps more common, it may be the result of several etiologic factors having a cumulative effect.

In the case of arsphenamine jaundice there is the toxic effect of arsenic, the frequently present syphilitic hepatitis, and usually a superimposed infection with viral hepatitis. Yellow atrophy from cinchophen is probably due solely to the toxic effect of the drug. It is probable that pregnancy imposes some sort of strain on the liver. This may well be of a nutritional nature caused by a deficiency in methionine and related substances. Decreased intake and increased demand for proteins are often present. Such a liver is more vulnerable to viral hepatitis or other liver trauma and can explain the relatively high mortality reported in pregnancy. In addition, eclampsia may be associated with acute liver failure.

CONCENTRATION OF SULFONAMIDES IN BLOOD AND URINE

To the Editor:—It is often difficult to obtain blood samples by venipuncture from infants and young children for various laboratory determinations. However, urine specimens are readily obtained. Is there a definite correlation between urine and blood sulfonamide levels, and can the latter be calculated from the former, assuming unimpaired renal function?

M.D., New Jersey.

Answer.—The discrepancies between the concentrations of sulfonamides in the blood and the urine are sufficiently great to make it an unpractical clinical procedure to ascertain the level of the sulfonamide in the blood by determining the concentration in the urine. Furthermore, the concentration of a sulfonamide in the urine is dependent on the urine volume, and some difficulty is encountered in quantitating the total volume of urine excreted by infants. Then too the proportion of free sulfonamide to acetylated sulfonamide varies from one person to another. A more practical method for determining the blood sulfonamide level in infants and children would be to employ the micromethod, in which only a few drops of blood are necessary.

RADIUM IN THE NASOPHARYNX

To the Editor:—Please give me the present status of the use of radium in the nasopharynx in the treatment of chronic nasal allergy and frequent upper respiratory tract infections complicated by severe deafness. Both of these conditions were present in 2 siblings aged 6 years and 4 years. Both have had complete tonsillectomy and adenoidectomy; but over a one and one-half year period have become progressively worse, particularly as far as their hearing is concerned. Can you suggest any other acceptable form of treatment? It is worthy of note that while there is a strong family history of allergy, there is no history of otosclerosis.

M.D., Phoenix, Ariz.

Answer.—The use of radium in the nasopharynx in the treatment of frequent upper respiratory tract infections complicated by severe deafness is a procedure of the greatest value. First suggested and popularized by Samuel J. Crowe and his co-workers at Johns Hopkins Hospital eighteen years ago, the method is now generally used and approved, as attested by a large number of favorable reports in the medical literature.

Since adenoids form an integral part of the mucous membrane of the nasopharynx they cannot be completely removed surgically, and nodules which are left hypertrophy quickly. Because of their location, these lymphoid masses, particularly when swollen as the result of infection, block the eustachian tubes. Changes in the middle ear and deafness follow.

Before one uses radium in the nasopharynx, there should be sufficient indication to warrant the procedure. The nasopharynx should be visualized through the nasopharyngoscope to see if the tubal orifices are encroached on or occluded by lymphoid masses. Examination of the ears should show some discoloration of the tympanic membrane and retraction, which may be confined to Shrapnell's area. As pointed out by Crowe, audiograms in these early cases may show only a loss of hearing for the higher frequencies, but, as the condition progresses, successively lower tones are involved until the conversational range is reached.

Various investigators have noted that some children who were being treated for deafness and who were also asthmatic showed a concomitant improvement in their asthmatic condition during radium therapy. This has been particularly true in cases due to bacterial allergy, while the atopic conditions have been less benefited. There have not been reports as to the effect on children with chronic nasal allergy, though presumably, if this is due to a bacterial allergy and the bacteria are in infected nasopharyngeal lymphoid nodules, improvement might also be expected here.

HISTOPLASMOSIS

To the Editor:—The following information regarding histoplasmosis would be appreciated: 1. Has any drug been found to be of benefit other than symptomatically? 2. If not, what drugs have been found to be of no value? 3. How effective is the skin test in confirming the diagnosis? 4. Where can the antigen be obtained for this test or the serum be sent for testing?

M.D., Michigan.

Answer.—1. No drug has been found to be consistently beneficial in the treatment of histoplasmosis. Parsons and Zarafonetis (Histoplasmosis in Man, *Arch. Int. Med.* **75:**1 [Jan.] 1945) cited a report of apparent chemotherapeutic success obtained by the use of neostam (stibamine glucoside) in 1 patient with this disease. Another patient apparently derived benefit from treatment with neostibosan (diethylamine para-aminophenylstibimate) alternated with stilbamidine (4-4 diamidinostilbene). These same compounds, however, have failed to alter the course of the disease in other patients. A somewhat similar situation exists with regard to the sulfonamide compounds. These have been unsuccessful in several cases, but A. C. Curtis and E. P. Cawley (article to be published) describe healing of a localized genital lesion following the prolonged use (eighty-seven days) of sulfadiazine 4 Gm. daily.

2. Substances found to be of no value include potassium arsenite, neoarsephenamine, sulfarsphenamine, acetarsone, sodium thiosulfate, iodides, ionized metals, ammonium and potassium tartrate, stibophen, quinine, quinacrine hydrochloride, thymol, bone marrow and pentnucleotide. Several trials of penicillin therapy have also been unsuccessful. Reports concerning the clinical use of streptomycin for histoplasmosis have not yet appeared. Seabury and Artis (*Proc. Soc. Exper. Biol. & Med.* **61:**15 [Jan.] 1946), however, have performed in vitro studies which revealed that high concentrations of this antibiotic did not inhibit the growth of Histoplasma capsulatum organisms.

3. At present the skin test with histoplasmin antigens is of questionable diagnostic value. Several patients with proved histoplasmosis have had negative skin tests. Furthermore, large scale epidemiologic studies such as those of Palmer (*Pub. Health Rep.* **61:**475 [April 5] 1946) have revealed a sur-

prisingly high incidence of positive reactors to histoplasmin. This finding has lessened the possible clinical significance of a positive skin test in a particular individual. In addition it should be recognized that histoplasmin antigens have not been standardized, that the relative value of antigens prepared from the yeast phase and from the mycelial phase of H. capsulatum is unknown and that the significance of cross reactions obtained with other mycotic infections has not been defined. Much work remains to be done before the skin test can be properly evaluated either as an adjunct for epidemiologic surveys or as an ancillary aid in the clinical diagnosis of histoplasmosis.

4. Histoplasmin antigen is not commercially available at present. U. S. Public Health Service workers are actively engaged in histoplasmosis research and may be able to supply the desired antigen. It is suggested that a request be addressed to Dr. Michael L. Furcolow, Field Studies Section, Tuberculosis Control Division at the University of Kansas Hospital, Kansas City, Kansas.

Satisfactory serologic tests for histoplasmosis have not yet been devised.

STATE MEDICINE, SOCIALIZED MEDICINE AND PUBLIC HEALTH

To the Editor:—What is the definition of state medicine?

Scott D. Gleeten, M.D., Monrovia, Calif.

Answer.—The terms "state medicine," "socialized medicine," "public health" and "sickness insurance" are often used interchangeably. Actually there are distinctions which should be kept in mind.

Socialized medicine is an all inclusive term and connotes a form of medical practice in which the method of distributing medical care is made subject to the uses or influences of groups of persons, the community or the state.

State medicine is a form of socialized medicine in which the state attempts to provide medical services directly to the general population from funds raised by taxation. The end result is that physicians become employees of the state, with medical practice subject to the directives of a third party. Any form of state medicine necessarily embodies the use of compulsion.

Public health is a form of socialized medicine concerned with special groups and special activities for the protection of the health of the people as a whole.

Sickness insurance is a form of socialized medicine, either voluntary or compulsory, concerned only with spreading the cost of medical care.

ECZEMA WITH MONILIA ALBICANS

To the Editor:—What is the best treatment for eczema (chronic and subacute) which is caused by Monilia albicans? It appears in the spring and in the fall and covers the hands and feet. What, if anything, can be done to prevent its becoming active during the times when it is quiescent? What is the best treatment if it appears in the mouth?

Kamal Zody, M.D., Tripoli, Lebanon, Syria.

Answer.—The meager description of the condition makes it impossible to arrive at a diagnosis. Monilia albicans is an invader of moist warm areas and therefore produces intertrigo in the large and small folds of the body. For the same reason it is most active in hot humid midsummer weather rather than in the spring and fall. The organism is the most resistant of all the fungi to the fungistatic and fungicidal chemicals which are usually cutaneous irritants and which should be used with great care. Mention is not made as to whether Monilia albicans was found on culture of the tissue. Potassium permanganate soaks in 1 : 4,000 solution and gentian violet in 3 per cent aqueous solution would be safe and probably fairly effective treatment.

A recurrent semiannular eruption on the hands and feet would suggest a seasonal contact dermatitis or a toxic eruption.

COLORED RINGS IN TESTS FOR URINARY ALBUMIN

To the Editor:—I use Robert's reagent in testing for albumin in the urine. The reagent is composed of chemically pure nitric acid 1 part and saturated solution of magnesium sulfate 5 parts. Frequently in making ring tests which are negative for albumin there appears a ring of crimson-violet (as nearly as I can describe it). I have been unable to determine what substance or substances produce this color show and would appreciate it if you could enligthen me.

Seth W. Ellis, M.D., Anderson, Ind.

Answer.—Colored rings near the junction of the fluids may be produced by iodides, urinary pigments, bile or indican, according to Todd and Sanford (Clinical Diagnosis by Laboratory Methods: A Working Manual of Clinical Pathology, ed. 10, Philadelphia, W. B. Saunders Company, 1943, p. 92).

REFRACTORY ECZEMA IN YOUNG WOMAN

To the Editor:—A married woman aged 34 developed an eczematous eruption on the hands during adolescence which has been with her most of the time since. It was treated as an eczema with varying degrees of success, but she was rarely free from discomfort until during her first pregnancy, when the eruption disappeared spontaneously and she was free from it till some months advanced in lactation. This occurred during each of her three pregnancies. Each time the relief was shorter after confinement. During the years before marriage there had been plenty of evidence that the condition was affected by diet and she was restricted after taking tests and experimentation with diets almost to the point of starvation. During the periods of pregnancy she could eat freely and without any restriction whatever. Between the second and third pregnancies antuitrin-S was found to give nearly complete relief for over two years. It was used steadily a short time and then just before menstruation. The beneficial effect of the antuitrin seems to have worn off, and now with the last baby eight months old and menstruation not well establihsed she is having continuous misery. A diagnosis of fungous disease was considered, but treatment directed to that has not helped. Lymphangitis with swollen arms and tender axillary glands have occurred twice.

M.D., Montana.

Answer.—The relationship between eczematoid dermatitis and the sex hormones is quite vague. The condition may clear up or get worse during pregnancy. Often it becomes aggravated in the premenstrual phase. There is little scientific evidence which would indicate that the ovarian hormones themselves have any direct action in producing a dermatitis, although it is known that there may be an effect on skin at the times when the estrogenic titer of the tissues is elevated. This may account for certain cases of premenstrual edema, premenstrual acne, pigmentations of the skin during pregnancy, pigmentation of the nipples with maturity and certain other uncommon dermatologic lesions of various types associated with pregnancy. A deficiency of estrogens either at the menstrual period, at which it is temporary, or a constant one at the menopause will result in an increased capillary fragility with a tendency to purpura.

There is the likelihood that the eczema in this patient is of neurogenic origin, although some evidence seems to indicate a possibility of an allergic basis. There does seem to be a typical pattern in this case often seen with psychogenic disorders, relief being obtained with a number of different procedures temporarily but becoming ineffective on repetition of therapy. Relief is obtained, then, through the power of suggestion. It is possible that during pregnancy the patient felt free of responsibility and received more attention, so that some of the nervous tension contributing to the severity of the dermatitis was removed. It is significant that the relief from the dermatitis was shorter after each of three pregnancies, as her return to active duties involved more and more responsibilities.

It is suggested, therefore, that the psychic factors be analyzed to determine whether or not they may play a major role. Treatment would then be based on the results obtained following investigation into this aspect of the patient's condition. It is expected, however, that certain therapeutic measures will be applied as is usual with such cases, such as refraining from washing with water, the use of synthetic detergents instead of soap, and only the mildest of ointments to eliminate irritations of nonspecific nature.

ENDOCRINE OR ANDROGEN THERAPY AND ENDOMETRIOSIS

To the Editor:—A white woman aged 40 had a hysterectomy and oophorectomy because of a widespread endometriosis with questionable implants on the peritoneum of the intestines. My question is, What is the present consensus on the use of estrogens for menopausal symptoms in this type of case? If estrogens are safe to use is there any particular time element before they are started?

M.D., Indiana.

Answer.—Estrogens should not be used in the presence of endometriosis because they may reactivate endometrial tissue which is present and also bring about a return of pain. Faulkner and Riemenschneider (*Am. J. Obst. & Gynec.* **50:**560 [Nov.] 1945) reported a case of severe periodic bleeding from endometriosis of the bowel requiring over seventy partial or whole transfusions. Oophorectomy was finally done in December 1941 and the patient remained well until June 1942, when diethylstilbestrol was administered for menopausal symptoms and severe rectal bleeding recurred.

When women develop menopausal symptoms following an operation for endometriosis they should be given testosterone propionate. Usually a 10 mg. tablet taken by mouth daily will give relief, especially if supplemented by 16 mg. of phenobarbital three times a day for a few days at a time. In many instances phenobarbital alone will relieve menopausal disturbances.

The Journal of the
American Medical Association

Published Under the Auspices of the Board of Trustees

Vol. 135, No. 9
Chicago, Illinois
November 1, 1947

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PROCTOLOGIC SURGERY OF THE LARGE BOWEL

Chairman's Address

MARTIN S. KLECKNER, M.D.
Allentown, Pa.

The hundredth anniversary of the birth of the American Medical Association provides adequate cause for celebration. Were it not for the undeniable progress that the physicians of this country have made through their achievements many people throughout the whole world would not have healthier, happier and longer lives today. The accomplishments of physicians and their co-workers have been the result of endless hours of study, sickness and sacrifice. Many of them unstintingly gave the best years of their lives and refused opportunities to sell their discoveries for fabulous remuneration. Their research developed better treatment and provided absolute cure to many sufferers.

The Section on Gastro-Enterology and Proctology, of which it is my distinguished honor to be chairman, was brought into existence by the efforts of such proctologists as Drs. Joseph M. Matthews of Louisville, Ky. (the first president of the American Proctologic Society); Dwight H. Murray of Syracuse, N.Y.; Louis J. Hirschman of Detroit; Alois B. Graham of Indianapolis; William M. Beach of Pittsburgh; J. Rawson Pennington of Chicago, and others. The gastroenterologists prominent in this section's definite establishment in 1917 at the New York meeting of the American Medical Association included Anthony Bassler of New York, Horace W. Soper of St. Louis, Frank Smithies of Chicago, Franklin W. White of Boston and Joseph Sailer of Philadelphia. These are but a few of the outstanding proctologists and gastroenterologists in this country who have elevated the status of their respective specialties and provided the real backbone for this present splendid section. Since its organization it has been the yearly custom to alternate the chairmanship between the proctologists and the gastroenterologists so that fifteen proctologists and fourteen gastroenterologists have served most creditably as chairman.

Because of the increased interest among the members of the American Medical Association in these two specialties during the past decade, their sectional meetings have become somewhat crowded, not only in members but in material wealth, with the result that it may be necessary in the near future to divide and create separate sections (in Gastro-enterology and Proctology).

Were it not for the two great national societies, the American Gastro-Enterologic Association, which was founded fifty years ago and now comprises a membership of over two hundred, and the American Proctologic Society, which was born in 1899 and now has a roster of two hundred and fifty fellows and associates, this Section of the American Medical Association could never function. It is because of the members in these two outstanding organizations that the definite principles of the study, diagnosis and treatment of the various parts of the entire digestive system from OO (oral orifice) to AO (anal orifice) are so well presented.

Much progress has been made in the surgical technic of all specialties in the past few decades. In emphasizing proctologic surgery of the large bowel, it might be well to evaluate the changes in colon surgery during the last quarter of a century. It is interesting to note that in the constitution of the American Proctologic Society this science is defined as the "study, diagnosis and treatment of diseases of the anus, rectum and colon." For many years this organization has demanded general surgical training primarily, and when this training is combined with adequate proctologic instruction, a fellowship is obtainable.

Curiously enough, the word proctology comes from the Greek words Πρωκτός (proctos) meaning anus and λόγος (logos) meaning discourse, so that the original interpretation refers to a "discourse on the anus," although the scope of modern proctology has far exceeded this early designation.

Nevertheless, some members of the medical profession still seem to think that these medieval limits remain. It is known that all surgical specialties are the outgrowth of general surgery, which must be regarded as the parent stalk. With the progression of every specialty, so in proctology—surgeons became more interested in this field of activity, and because of their more intent study and the limitation of their work they became more adept in the treatment of proctologic disease. While the proctologist's superiority in his specialty is recognized and he deserves much praise, the parent has been most hesitant or loath to recognize its offspring or to admit that in certain respects the scion has surpassed the parent in fruition. Many of the older proctologists confined their efforts to diseases of the anorectal area, but the present personnel of the American Proctologic Society with few exceptions are colon trained and colon minded. They must be prepared to satisfactorily treat any surgical problem which may become apparent when the abdomen is opened. The anatomic structure of the terminal portion of the bowel is decidedly complicated and involved. Considerable study and practice is required in order to obtain the most satisfactory results without injuring

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Read before the Section on Gastro-Enterology and Proctology at the Ninety-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., June 12, 1947.

or destroying its muscular mechanism. I am not a believer in the short courses in proctology that are offered to physicians, because the instruction given is inadequate and leads the novice to believe that he can satisfactorily treat such pathologic conditions. As a means to broaden his diagnostic field and to aid in the correction of some of the minor conditions so frequently encountered, I believe it should prove beneficial to both physician and patient. My main objection to most of these attempts at cure is to the cursory methods employed to examine the area above the existing lesion. Frequently a poor history is taken, coupled with an inadequate physical examination. When the physician is cognizant of the fact that the area proximal to the anorectal or pectinate line (which is approximately 1½ inches, or 3.8 cm., from the anal orifice) is devoid of sensory nerve or pain fibers, then only will he realize that serious danger may lurk beyond the reach of the gloved finger and may require the use of the lighted sigmoidoscope or the opinion of the trained roentgenologist, who by the use of the double contrast barium-air enema may interpret factors not visible to the naked eye. Frequently several of these "roentgen seances" are necessary to determine the presence or show the absence of the various colonic lesions.

Table 1.—*Incidence Rates in Four Hundred and Forty-One Cases of Cancer of the Large Bowel, 1931-1946*

	Cases	
Age	No.	%
Under 20	2	0.4
20 to 30	4	0.7
30 to 40	18	4.0
40 to 50	67	15.0
50 to 60	120	27.0
60 to 70	168	38.0
Over 70	62	14.0
Total	441	
Sex:		
Male		56%
Female		44%
Nationality:		
American born		52%
Mid-European		37% (Amer.)
Hebrew		11%

Unfortunately many surgeons are of the opinion that it is a simple matter to cure an extensive fistula in ano complicated by numerous tracts or properly to drain and cure some of the enormous abscesses so frequently encountered around the terminal area of the bowel. They fail to realize that such abscesses are part and parcel of associated fistulas, which were the primary cause of the purulent collections. Rectal prolapse, which is frequent in advanced hemorrhoidal disease, will often make the operative procedure an exceedingly tedious one, because absolute cure and proper function are mandatory. The pilonidal sinus (cyst) regarded so lightly by many wielders of the "aseptic scalpel" may prove extremely hazardous to the success of any surgeon if it has many associated ramifications. How many of these patients are given proper sigmoidoscopic examinations prior to surgical intervention, and what kind of postoperative care do they receive? Seldom should any of the aforementioned proctologic conditions require more than the initial operative procedure. To tell the patient that the condition has recurred is invariably an admission on the part of the surgeon that the first operative procedure was not properly performed. Unfortunately there are entirely too many physicians trying to do work for which they are inadequately prepared. To admit one's limitations in certain fields of surgical activity should be regarded as an asset, but it certainly is a liability to those who continue to do poorly the work which their colleagues can perform more proficiently. There have been many instances in which operation on some of the previously mentioned proctologic conditions entailed more difficulty than I might have encountered in performing some resection of the colon proper or a one stage Miles operation.

Table 2.—*Location of Lesion*

	Cases	
Location * (large bowel)	No.	%
Retrorectal	3	0.7
Anus	13	3.0
Rectum (5 inches)	294	66.0
Rectosigmoid (5 to 10 inches)	93	21.0
Left side	27	6.0
Transverse	3	0.7
Right side	8	2.0
Total cases	441	

* Location of 69 per cent of lesions was determinable with the gloved finger. Biopsy specimens (416) were taken whenever possible.

Table 3.—*Earliest Symptom Noticed by Patient (Three Hundred and Four Cases)*

	1st	2d	3d	Initi
Change from normal bowel habit	192	85	40	64
Bleeding	66	115	49	22
Tenesmus	21	75	128	7
Abdominal pains (cramplike)	15	11	2	5
Pains (local)	8	9	12	2
Mucus, flatus etc	2	6	30	
Loss of weight	...	...	43	

Table 4.—*Time Interval (Fault of Patient) Between th Appearance of Earliest Symptoms and Medical Consultation*

Interval	No. of Patie
Under 3 mo	20
3 to 6 mo	25
6 to 9 mo	65
9 to 12 mo	52
Over 1 yr	142
Definitely obtainable	304

All physicians remember those early days when large majority of them, as "embryo doctors," express a desire to become *surgeons or specialize in some pa* ticular branch of medicine. Time, lack of money, t establishment of a good general practice and ofttim a large family prevented these practitioners from acti participation in advanced study. Others less hand capped continued to pursue postgraduate work an when fully qualified were permitted to take Boa Examinations for Certification. I have often wondere whether there would have been a higher percentage first rate specialists from the former group, who di not have the opportunity to go on, than from those wh were able to continue their postgraduate educatio My own conclusion has been that every physician ha a particularly important job to perform, whether h be a general practitioner or a specialist. Only fron those who believe that they can always improve thei diagnostic routine and better their methods of treat ment may the best results be expected. In my contacts with the laity I have learned that the patient is often afraid—afraid of what the physician will tell him—an as a result he frequently puts off seeking medical advic at all until it is too late to help him. Some conditions of the large bowel, to cite chronic nonspecific ulcerative colitis and the erroneously labeled spastic, or mucous, colitis as good examples, can be legitimately and profitably studied from the psychosomatic point of view. Surgical procedures may remedy the former condition, but an entirely different approach is necessary to cure the latter disease, because it calls for an understanding and appraisal of the patient's problems. Resourceful therapeutic measures can only be administered after one has gained the complete confidence of the patient. It is not unusual to acquire this when some good sensible advice and "plain speaking" by the consultant has been judiciously expressed. This does require time, but it gets results because it is the most important part of the entire treatment. I have never been impressed by those who omit this phase because they are "too busy."

Most proctologic diseases can be successfully treated. In regard to chronic ulcerative colitis and ileitis I would refer every one of you to those splendid papers submitted in the past year or two, in which analyses and treatments have been definitely outlined by proctologists and gastroenterologists alike. Cancer of the bowel usually offers its greatest problem in that the malignant growth has been permitted to advance too far in too many patients to permit of good prognosis. No one disputes the fact that a good surgeon with the aid of competent, trained assistants and experienced anesthetists cannot help but get the best results when performing colonic surgery, whether the malignant process is fairly well localized or even far advanced. Good percentages of cure and a low death rate can be readily assured if the surgeon draws a definite line on operability. Preoperative and postoperative care have been improved and modified so that today one can readily help those whose condition was regarded as hopeless fifteen years ago. While the truth still prevails, that the curability of cancer varies inversely with the duration of the disease, greater success in achieving surgical accessibility to all tumors has been experienced.

Table 5.—*Time Interval (Fault of Physician) from Consultation of General Practitioner Until Specialist (Surgical) Aid Was Urged*

Referred to Specialist	No. of Patients
At once	25
Less than 1 mo.	8
1 to 3 mo.	24
3 to 6 mo.	62
Over 1 yr.	70
Total	189
Sought direct consultation	105

Note: One patient consulted twelve physicians (one a prominent surgeon); the thirteenth, a general practitioner, finally made a digital examination and diagnosed a carcinoma of the rectum.

Table 6.—*Analysis of Diagnostic and Therapeutic Errors*

	Cases	
Nonsurgical		
Colitis	16	
Impaction	4	
Constipation	4	
Lumbago	1	
		25 cases
ned)		
ns included)	42	
ino	16	
[illegible] sterectomy (supravaginal)	13	
Prostate	3	
Hernia	1	
		75 cases
Total cases (erroneous diagnosis and treatment)		100 (22.7%)

The symptomatology of cancer is being broadcast regularly to both lay and medical persons, but it is equally important that all become more cognizant of the precancerous period and give full support and aid to those groups endeavoring to detect lesions which may (without any apparent symptom) give proof that cancer is present or may shortly manifest early degenerative changes. It is to be hoped that the near future will bring some fairly simple test, so devised that any one exhibiting the slightest sign or symptom of early cancer may be properly screened and treated.

Table 7.—*Types of Treatment*

Consultation only		75
Surgical intervention advised and performed		219
Laparotomy (alone)	15	
Colostomy (only)	19	
One stage colostomy and extirpation (Miles)	113	
Two stage operation	21	
Colectomy (partial)	51	
Operation refused or inoperable		117
Total cases		441

Table 8.—*Analysis of Results of Treatment*

Cures (134 of 249)			Deaths (105 of 219)		
	No.	%		No.	%
5 years +	24	10	Within 24 hours	3	
3 to 5 years	46	18	Within 1 week	17	
Less than 3 years	64	26	Within 1 month	9	
			Within 6 months*	22	
	134	54	Within 1 year	18	
			Within 2 years	46	
				105	46

* One patient committed suicide.

Table 9.—*Additional Observations on the Diagnosis and Treatment of Cancer of the Large Bowel*

The majority of patients received salves, soapsud enemas or suppositories as initial treatment.

In 294 rectal carcinomas roentgenologic study, including barium enema, was done in 50 cases (17%). (Digital examination alone was necessary for diagnosis.)

Inoperable cases (117) included those of 12 patients with factitial proctitis.

In earlier cases when grading of specimens for biopsy was done, grade 3 comprised 51%, with grades 2 and 4 each 23%.

In 2 of my own cases in which operative intervention for acute strangulated hermorrhoids and painful fissure was done, a barium enema (double contrast air) study later revealed a carcinoma of the colon (high up).

In carcinoma of the rectum complicated by arterial hypertension, 1 patient (blood pressure 220/110) is alive after twelve years (two stage operation).
  (*a*) Diabetes mellitus: 10 patients (all died in 1 to 2 years).
  (*b*) Tertiary syphilis (no gumma): 5 patients (all died).

A summarization of data on 441 cases of cancer of the large bowel, in my private practice covering fifteen years, revealed (table 1) that 65 per cent were present between the ages of 50 and 70, slightly more frequent in men than in women, and (table 2) that 69 per cent were determinable with the gloved finger (if the digital examination was made to cover the distal 5 inches, or 12.7 cm.). Diverticulitis and polyposis both showed degenerative change (table 4) in 18 cases (4 per cent), but the figure for polyposis appears entirely too low because it is known that so many malignant growths have had their beginning in the apparently benign polyp. Change of bowel habit (table 3) was the earliest symptom obtainable from careful questioning of 304 patients, with the symptoms of bleeding and tenesmus following. When change in bowel habit was the second or third symptom to appear it was superseded by the aforementioned symptomatology. The time interval between the appearance of the first symptom and medical consultation (table 4) was appalling. It indicates a great need for "jet propulsion" methods in cancer education among the laity. A better but not too wholesome record is evident in the length of the interval between the patient's application for medical advice and his referral for surgical consultation (table 5). In this regard the poor record was due in great measure (tables 6 and 7) to wrong diagnosis and treatment, accounting for error in almost 23 per cent of cases. It is indeed a reflection on the real status of the physician consulted, and he alone can correct this inexcusable calamity. I must emphasize the importance of initial proctologic examinations (including proper sigmoidoscopic study) prior to all barium study of the colon and the value of taking specimens for biopsy. Let the proctologist ever be cognizant of the fact that no matter how efficient or nationally prominent he may be, he is liable to make some honest mistakes.

202 North Eighth Street.

THE MASSACHUSETTS BLOOD AND BLOOD DERIVATIVES PROGRAM

LOREN D. MOORE, M.D.
Assistant Director, Division of Biologic Laboratories
GEOFFREY EDSALL, M.D.
Director, Division of Biologic Laboratories
and
VLADO A. GETTING, M.D., D.P.H.
Commissioner, Massachusetts Department of Public Health
Boston

Blood and the various products obtained from blood are now recognized as essentials for good medical care. A tremendous increase in the use of both whole blood and plasma has resulted from the military and civilian medical experience of the last few years. This has placed a steadily growing burden on both the patient and the facilities which provide these products—the patient because of the sometimes staggering charges which often accumulate when quantities of blood or plasma now considered adequate are administered, and the medical service because of the growing difficulty in actually finding sources for the increasing requirements of these substances. The cost, in particular, becomes prohibitive to many patients, unless means are found to reduce the costs through increasing the number of voluntary blood donations, through centralizing the expensive operations of procurement and processing and through equalizing channels of distribution, so that local shortages of specific blood types or products of blood will not in themselves contribute to the costs of procurement.

Blood is a peculiar commodity that cannot be manufactured in a test tube but must be obtained from human donations. Ever since blood transfusion was begun it has been possible to find, with sufficient effort, enough voluntary donors to provide a significant proportion of the quantities which are needed, and, with the establishment of preserved blood banks some years ago, the utilization of such donations was made much more efficient. The collection of over 13,000,000 pints (6,151,000 liters) of blood, voluntarily donated, from our citizens by the American National Red Cross during the war showed that a tremendous reservoir of this fluid existed in the veins of the generous-minded people of this country, as was shown also in England, Canada, Australia, South Africa and elsewhere. In turn, many communities have organized community blood banks, serving the entire hospital group of a given area, with a resulting increase in the uniformity of the supply and the efficiency of procurement. However, even a community program fails to meet all the requirements of an ideal blood program, for it tends to serve best only those communities which are already best served in other ways, and it may prove inadequate to carry the loads imposed by unusual emergencies which a larger program could absorb. It was partly on account of these limitations that Michigan, North Dakota, Illinois, Vermont and other states undertook and successfully operated statewide plasma programs during the recent war years.

The Massachusetts Department of Health pioneered fifty years ago in the provision of diphtheria antitoxin without charge for the treatment of any patient for whom a physician felt that such treatment was required. The therapeutic results and the consequent economic saving were salutary and have abundantly justified the institution of such a project and such a policy. The Massachusetts Department of Public Health, in accordance with this policy, investigated three years ago the desirability of establishing a statewide blood plasma program. Consultation was obtained with the medical society and hospital leaders and clinical and laboratory authorities, and a survey of the current requirements for blood and plasma was carried out through the Massachusetts Hospital Association. It was concluded that a statewide program was desirable, provided it met the following objectives: (1) The program should make available not only blood plasma, but preserved whole blood, red cells, and the various fractions of plasma—thus assuring the supply of all the derivatives of blood for which a need exists and insuring the most economic use of each unit of blood procured, and (2) the program should make these products available with equal facility to all communities and individuals in the state, irrespective of geographic or financial considerations.

Such a program was made possible with the appropriation of a sum set aside by the legislature for this purpose in July 1945. Since that time, the program has gotten under way and has, with certain important limitations, begun to meet the objectives as originally outlined. The Massachusetts Blood Program may be considered unique in that it is the first comprehensive statewide blood program in operation. Other states have undertaken the provision of blood plasma, and some counties and cities have developed whole blood banks, but none has a program which includes processing and distribution of whole blood, red blood cells, blood plasma and the fractions of blood plasma without charge.

The aim of the Massachusetts Blood Program is to provide all the blood and blood products required by the residents of the commonwealth. No charge is to be made for any of the products, regardless of the financial status of the recipient. However, hospitals or physicians may make the usual administration

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Read before the Section on Preventive and Industrial Medicine and Public Health at the Ninety-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., June 13, 1947.

charge. The experience gained from this program may therefore be of especial interest in the light that it may shed on the accomplishments of such a program and some of the problems which must be met.

A statewide program of this type is particularly beneficial to the small hospitals that use a small amount of whole blood. Many such hospitals are not equipped or staffed to operate blood banks, and to do so would entail a large expenditure of funds. With blood available at subdepots in neighboring hospitals, the small hospitals have only to do blood grouping and Rh typing, obtain blood from the subdepot, and cross match before giving the transfusion. Blood supplied in this manner may prove the difference between life and death, since considerable time is required to locate a donor, type, cross match and bleed to provide blood in an emergency.

Public health, medical and hospital authorities in Massachusetts realized that the stimulus derived from the use of blood and blood products in the armed forces would be reflected in civilian medical practice after the war; also, that the American public was well aware of the virtues of and needs for blood and blood products for general public use, because of the extensive education derived from the blood procurement program established during the war by the armed forces and the American Red Cross.

As early as 1937, the American Red Cross authorized a few selected chapters to carry on an experiment in the enrolment of volunteer blood donors to be available on calls from hospitals and physicians for blood donations free of charge to those not able to pay for them. Subsequently the Red Cross participated through its local chapters in developing community blood and plasma bank services and, on a national scale, in the gigantic wartime blood procurement program. Toward the end of the war this experience had led to a widespread demand that the Red Cross render a similar service to the civilian population. On the advice of numerous professional groups and with the guidance of a distinguished expert advisory committee, the American National Red Cross approved participation of chapters in civilian blood programs on a far broader basis. Several significant provisions were set up—chiefly that the program be sponsored by a reliable medical or health agency which was to be responsible for the technical operations; that the Red Cross be responsible only for enrolment of donors and nontechnical aid; that the program be acceptable to the medical profession in the community, and that no charge be made to physicians, hospitals, clinics or patients for the products made available through such a program. On the basis of these requirements established by the American National Red Cross, the Massachusetts Department of Public Health proceeded to develop a plan for a statewide blood program.

Briefly, the plan for the Massachusetts Blood Program is to collect blood from volunteers in all communities. This is done by a "bloodmobile" visiting communities on a prearranged schedule. The "bloodmobile" staff consists of a physician, five nurses, a medical technician, a blood custodian and a truck driver. The unit carries all technical equipment required in the clinic. The physician is responsible for the operation of the clinic and the selection and care of donors. The nurses do the actual bleeding under the supervision of the physician and assist the physician in selecting donors by medical history. The medical technician determines the hemoglobin, blood group and Rh factor of each donor. The blood custodian is charged with the care, refrigeration and storage of the bloods collected and with seeing that the bloods are delivered to the central laboratory each night. The truck driver not only drives the truck that carries the equipment but assists in setting up and breaking down the clinic; he also assists generally in the operation of the clinic.

Donors are recruited locally by the chapters of the American Red Cross. The successful recruitment of donors demands continuous and well organized local publicity. Various social, fraternal and civic organizations and groups must be interested in the program, and through their participation the members of the organization are acquainted with the program and as residents of the community actively engage the community in the program. The Red Cross chapters also provide the place for the clinic and provide nontechnical equipment and personnel for the operation of the clinic. The space for a six bed clinic requires a minimum of 1,500 square feet (139.35 square meters). This may be a single room divided by curtains or screens into a registration room, 500 square feet (46.45 square meters); a donation room, 500 square feet; a recovery room, 100 square feet (9.29 square meters), and a canteen, 400 square feet (37.16 square meters); or connecting rooms of adequate size may be used. Kitchen facilities to provide a light lunch for donors after donations should be available. Rest room facilities and utilities for the immediate washing of needles, tubing and other equipment must be available. American Red Cross staff assistants, gray ladies, nurses' aides, canteen personnel and motor corps personnel comprise the nontechnical personnel required.

At the start, the Massachusetts Blood Program was divided into three phases. The first was to procure bloods for the preparation of blood plasma. However, the abrupt ending of the war and the return of the surplus armed forces plasma to state health departments provided a sufficient amount of plasma to meet the present needs. The second phase of the program was to collect blood to be used for fractionation. Fractionation would provide antihemophilic globulin, thrombin and fibrinogen for the preparation of fibrin films and fibrin foams, blood-grouping globulins and anti-Rh typing serum, immune serum globulins and salt-poor albumin. The third phase, so placed because of the many technical difficulties to be encountered in distribution and storage, was to provide whole blood.

Because of the highly technical nature of processing and distributing blood and blood products, it was necessary to provide a special addition to the Massachusetts Department of Public Health Division of Biologic Laboratories building. Many delays were encountered in construction and procurement of equipment. The blood collection program actually began on Dec. 3, 1945, and moderate scale fractionation began approximately ten months later, on Oct. 15, 1946. Because of the delay in obtaining equipment for fractionation and the procurement of a fair supply of whole blood, it was decided to begin limited distribution of whole blood in September 1946. The institution of this third phase provided a means of working out some of the technical problems of distribution of whole blood.

From the inauguration of the program, on Dec. 3, 1945, to May 31, 1947, the "bloodmobile" has visited 153 communities to hold 236 clinics. During this period 19,204 blood donors have been registered; 2,828 have been rejected for one reason or another, and 297 persons having rare blood groups or Rh-negative blood have remained on call as volunteer donors in the community. A total of 81 bloods have been sent from the clinic directly to local hospitals for emergency use, and 15,990 bloods have been returned to the central laboratory for processing.

TABLE 1.—*Use of Blood and Blood Plasma in Massachusetts Hospitals, 1943*

Hospital Group	Number	Total Beds	Units of Plasma and Blood Used: Blood 500 Cc. Total	Blood 500 Cc. Per Bed	Plasma 250 Cc. Total	Plasma 250 Cc. Per Bed
Blood bank........	27	8,540	17,482	2.05	4,780	0.56
Plasma bank......	16	1,286	953	0.74	1,039	0.81
Nearby bank.......	30	2,385	1,452	0.61	1,792	0.76
No facilities........	20	2,610	697	0.26	942	0.36
Total............	94	14,821	20,584	....	8,553	....
Average..........				1.4		0.58

Of the 15,990 bloods delivered to the laboratory, 314 were rejected as not suitable for whole blood or for processing to blood plasma or fractions. Of the remainder, 8,195 have been processed to whole bloods, 274 have been made into plasma and 7,204 have been used for fractionation.

One of the most interesting phases of this program has been the noticeable increase in the use of blood and blood plasma. A sufficient stock pile of plasma fractions has not yet been accumulated to allow general distribution of fractions on a large scale, and fractions have been used in only a limited way for clinical trials.

Table 1 gives the results of a survey of Massachusetts hospitals in 1944 and shows that the 94 hospitals replying to the questionnaire and having a total bed capacity of 14,821 used a total of 20,584 standard 500 cc. units of blood for an average of 1.4 units of blood per hospital bed per year in 1943. During the same period, these hospitals used 8,553 small, or 250 cc., units of blood plasma for an average of 0.58 unit of plasma per hospital bed per year.

TABLE 2.—*Blood and Blood Plasma Used in Massachusetts Hospitals; Hospital Survey for 1946 (Public Health Districts)*

	Hospitals Reporting	Total Beds	Blood Banks	No Banks	Uses — 1946: Blood	Plasma 500 Cc.	Plasma 250 Cc.
District I.........	6	946	2	4	942	831	134
District II........	9	737	3	6	1,078	223	280
District III.......	33	4,848	11	22	20,112	2,308	1,650
District IV.......	10	853	3	7	1,415	789	61
District V........	7	693	1	6	1,421	913	315
District VI.......	4	603	2	2	1,148	583	...
District VII......	7	709	..	7	743	622	177
District VIII.....	2	195	1	1	206	271	...
Totals.........	78	9,587	23	55	27,065	6,540	2,647

Early in 1947 questionnaires were sent out to all hospitals in the commonwealth, and replies have been received from 78 hospitals having a total of 9,587 beds, as shown in table 2. These hospitals used 27,065 standard 500 cc. units of whole blood, for an average of 2.8 units of blood per hospital bed per year for 1946. The use of plasma also increased, and the hospitals report the use of 6,540 large, or 500 cc., units of plasma, for an average of 0.6 unit per hospital bed per year, and 2,647 small, or 250 cc., units of plasma to give an average of 0.27 unit per hospital bed per year. The combined total of plasma is equivalent to the use of 15,727 small, or 250 cc., units of plasma or 1.6 of these units per bed per year.

The hospitals reporting on this survey estimated the 1947 requirements for blood and plasma. The 78 hospitals estimated 33,173 bloods would be required for 1947, or an average of 3.4 standard 500 cc. units of whole blood per hospital bed per year. It is expected that 8,825 standard 500 cc. units of plasma will be used, for an average of 0.9 unit per hospital bed per year, and 2,634 small, or 250 cc., units, for an average of 0.27 unit per hospital bed per year. In terms of 250 cc. plasma units, this represents an average of 2.1 units per bed per year.

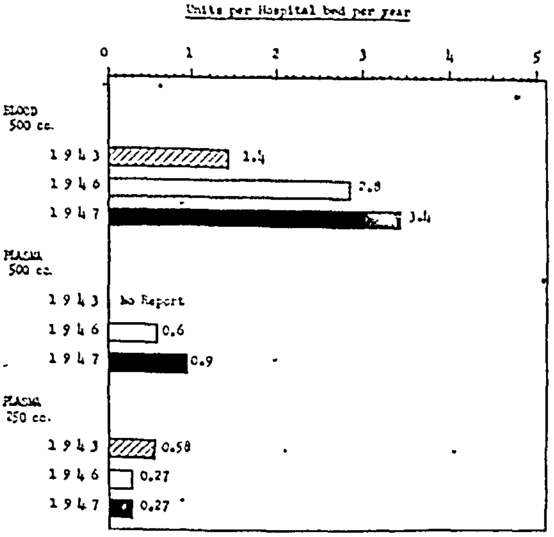
The use of blood for the years 1943 and 1946 and the anticipated needs for 1947 are summarized in table 3. Because very few 500 cc. plasma units were used in 1943, all units were reduced to the 250 cc. unit size. However, with the return of the surplus armed forces plasma and subsequent distribution to all hospitals in the commonwealth in March 1946, the use of double size plasma units has increased. There is an increase of 6,481 in the use of blood during 1946 over 1943, and in 1947 the estimated increase is 6,108 over 1946. The increase in the use of plasma is not so great and stresses the increased use of whole blood with a relative decrease in the use of plasma. The chart presents the graphic picture of the increased use of blood and blood plasma during 1943 and 1946, with the estimated amounts required in 1947 by the Massachusetts hospitals replying to the questionnaire.

TABLE 3.—*Amount of Blood and Blood Plasma Used in Massachusetts Hospitals in 1943 and 1946; Estimated Uses, 1947; Consolidated Data from Hospital Surveys*

Year	Hospitals Reporting	Total Beds	Units of Blood and Plasma Used: Blood, 500 Cc. Total	Blood, 500 Cc. Per Bed, Aver.	Plasma 500 Cc. Total	Plasma 500 Cc. Per Bed, Aver.	Plasma 250 Cc. Total	Plasma 250 Cc. Per Bed, Aver.
1943............	94	14,821	20,584	1.4	.....	...	8,553	0.58
1946............	78	9,587	27,065	2.8	6,540	0.6	2,647	0.27
1947............	78	9,587	33,173	3.4	8,825	0.9	2,634	0.27

To meet the blood and blood products needs, it is necessary to consider the number of bloods required to produce the products to be distributed. Also, consideration must be given to the donors required to meet these needs. For every group of donors recruited for donation, there are rejections because of acute colds, low hemoglobin levels, a history of jaundice and other causes. Those rejected plus those that fail to keep the appointment will average about 25 per cent. Of all bloods collected, an average of 10 per cent cannot be used for whole blood, but most of these can be used for fractionation. Bloods from a donor with a history of malaria or a tour of duty in malarious areas without a known attack of malaria cannot be used for whole blood but can be used for fractionation. Bleeding difficulties sometimes cause a short bleeding, and such bloods must be used for fractionation.

In table 4 the blood requirements for the year 1947 are given. These results are based on the total hospital beds in the hospitals of the commonwealth as of March 1, 1946. The state and county hospitals are not included in this table, since many of these institutions use little blood or blood products and have a large bed capacity.



Comparison of use of blood and blood products in Massachusetts hospitals in 1943, 1946 and 1947; the data are from hospital surveys.

The hospitals in the state of Massachusetts have a total of 21,312 hospital beds. Using the 1947 estimated figure of 3.4 units of blood per hospital bed per year shows that 72,460 usable 500 cc. units of whole blood will be required. To provide 500 cc. units of plasma, it will require 47,950 bloods, since 2.5 usable 500 cc. units of whole blood are required to provide a 500 cc. unit of plasma. Likewise, it will require 5,328 usable 500 cc. units of blood to provide the required number of 250 cc. units of plasma. Salt-poor albumin has not been available for unlimited civilian hospital use, and the quantity of salt-poor albumin must be estimated. It must be stressed that this estimate is without actual experience tables. Since it requires 4 usable 500 cc. units of whole blood to make a single 100 cc. unit of 25 per cent albumin, albumin demands being estimated to be equal to or greater than the plasma estimate for 1947, this assumes a demand for the maximum predicted plasma needs and an additional equivalent of albumin needs for unforeseen purposes such as nephrosis, eclampsia and emergency shock treatment. Disregarding the probability that use of blood and plasma may recede, since there is at present considerable waste, it is estimated that 93,768 usable 500 cc. units of whole blood are required to meet the estimated needs for albumin. From these totals, it can be seen that 219,506 usable whole bloods are required if the estimated hospital needs for whole blood, plasma and fractions are to be met in 1947.

With two "bloodmobiles" operating each day, five days per week, each unit staffed and equipped to collect 100 to 125 bloods per day, approximately 50,000 bloods can be collected. This will not meet the estimated needs for whole blood for the year 1947. Before adding additional collection units, the response of the residents of Massachusetts must be ascertained to be sure that they will donate the bloods required for the estimated needs of the coming year.

In order that the donor and the immediate members of the donor's family may be protected for blood needs for one year with a limited supply of blood, it has been necessary, for the time being, to limit blood for use of donors and immediate families except in genuine medical or surgical emergencies. Supplies distributed to hospital blood banks are used for nondonors and are replaced by bleeding at the hospital blood banks or at the mobile unit when it next visits the community or is in a neighboring community. The restriction of blood for donors and immediate families should increase donations of blood, for many families desire the protection for their blood needs just as they desire the protection of the Blue Cross or Blue Shield. Also, bloods are obtained from many that would not otherwise donate if all blood needs were provided without requiring a donation of blood. It is believed that donations of blood will eventually be sufficient to meet all needs without any restrictions on the use, but in contemplating or planning for this it is stressed that any blood program must be set up so that when there is a decrease in donations a means is readily available to limit the use of donated blood. This limitation then stimulates the incentive for individuals to participate in the program and thus provide more blood. Also, this stimulus may be obtained by making a small charge for the blood or by strict use of blood for the donor's protection only.

Whether sufficient "bloodmobiles" and personnel are provided to collect all bloods required or not, it is most essential that all hospitals operating blood banks should continue to collect bloods whenever possible. An established hospital blood bank has adequate facilities to store, check and distribute whole blood and blood products. The use of such blood banks as subdepots provides a means for distributing these products to neighboring hospitals that lack these necessary facilities. The responsibility for the administration of the proper blood group and Rh type blood to a recipient remains with the physician, although the actual technical work may be delegated to the hospital laboratory or blood bank. Again, the hospital blood bank may play an important role in the program by collecting blood from volunteer donors between "bloodmobile" visits to the community and also blood as replacements for that used for nondonors. The actual participation of hospitals and physicians in the program, along with residents of the community, insures a [illegible] munity program which aids materially [illegible] plete community partic[illegible]

Table 4.—*Massachusetts Blood Requirements, 1947, Based on Hospitals Reporting, Exclusive of State and County Hospitals*

Product	Hospitals	Total Beds	Units per Bed per Year	Bloods to Provide	Usable Whole Bloods Required, Units
Blood	184	21,312	3.4	1	72,460
Plasma					
500 cc.	184	21,312	0.9	2.5	47,950
250 cc.	...	......	0.2	1.25	5,328
Albumin (estimated)	184	21,312	?	4.0	93,768
Total					219,506

ABSTRACT OF DISCUSSION

Dr. I. Jay Brightman, Albany, N. Y.: In New York state we are also attempting to get a blood program under way. We are doing it somewhat differently from Massachusetts. Our plan is for an entirely decentralized type of program. Geographically, we are about three times the size of Massachusetts and a centralized program would be most difficult to manage. Also, we are operating on a state aid to community basis; the state is providing financial aid, but the community is responsible for 50 per cent of the cost of operation. In surveying the New York state hospitals we found that a state program was definitely indicated, partly because many hospitals had poor facilities for making blood readily available and partly because of low standards governing laboratory and clinical procedures in some hospitals operating blood banks. As an example of the latter, we found one hospital running as high as six blood transfusions per hospital bed per year. Their record of reactions was almost nil, which was surprising until the record and supervision systems were received. Obviously, if you keep no records and maintain no medical supervision, you will have no reactions to show. I should like to mention the high incidence of homologous serum jaundice which we are encountering in New York state. We know from other reports that there is a significant amount of jaundice following the administration of pooled plasma, far beyond that following whole blood transfusion. This is apparently due to the pooling of plasma with greater dissemination of the virus. We made a follow-up study of recipients of pooled plasma and found the incidence of jaundice to vary from 3 to 5 per cent. We have encountered some deaths. These findings call for education in the field of transfusion therapy, so that pooled plasma may be administered only when absolutely indicated. I have had the opportunity of visiting the Massachusetts laboratory and of observing the work of Dr. Moore and his associates. I believe that they are blazing a trail in this new field of public health and are to be congratulated.

Dr. Claude P. Brown, Philadelphia: I should like to know the probable cost for 1947 of such a program as Massachusetts has.

Dr. J. W. Mountin, Washington, D. C.: I should like to ask: 1. How is the Massachusetts program to be articulated with that being developed by the Red Cross? 2. What has been your experience in getting donors; is the problem difficult and what inducements do you offer? 3. Is the processing done directly by the State Health Department or under contractual arrangements with other agencies?

Dr. Loren D. Moore, Boston: We are having a similar experience with the use of plasma in the development of jaundice, and it is reaching a point where many of the hospitals are scarcely using plasma at all, but are using blood. A number of hospitals operating large scale blood banks are now using individual bleedings of plasma, by that method administering typed plasma to eliminate the hazard of jaundice. This is not a feasible program on a statewide basis, but it is something that we must consider. If the indications continue, the use of albumin will, I think, definitely replace that of plasma. So far the indications are that the jaundice virus is not carried over in the fractionation process, and we have a stable product without the hazard of transmitting the virus. Another great factor in favor of the albumin is that it is a small unit, can be carried in a physician's bag and can be administered readily at any place, and is very stable at ordinary temperatures. It is costing us now about $2 to $3 to collect blood in the field. That is high because our units are not operating 100 per cent every day. If our units could operate and collect 200 to 250 units a day, our cost would be definitely below $2 a unit. I cannot give you any definite cost figures on the plant operation. As to Dr. Mountin's questions, let's take the third question first. The work is all done in one central laboratory operated by the Department of Public Health. It is part of the Division of Biologic Laboratories. Getting donors is a problem. Our percentage of repeat-donors is, I should say, about 75 per cent. That is not good. We want new donors, and we want to do blood grouping and Rh typing eventually on the entire population of the commonwealth. We are now increasing our number of new donations.

Dr. Mountin: The relationship of the Red Cross—I think that you refer to the national program that the Red Cross has been investigating.

Dr. Moore: Yes, that is it. We have no connection, of course, with that. If that program goes through, it will be a number of years before it actually engages all of the states in the United States, and we are going ahead with our program just as though there were no talk of a national program. Just how we will fit into that program has, of course, not been determined. No doubt our laboratory will be used, probably for processing blood for the New England area. We believe that our plant will be used for the over-all program in some manner, and for that reason we are going ahead.

THE PHYSIOLOGIC BASIS OF MENSTRUATION: A SUMMARY OF CURRENT CONCEPTS

S. R. M. REYNOLDS, Ph.D.
Carnegie Institution of Washington, Department of Embryology
Baltimore

The physiologic basis of uterine bleeding in primates is a subject of perennial discussion. In this article I propose to present a series of related facts pertaining to menstruation. Some of these facts are so recently acquired that it is impossible to incorporate them with certainty in the older views of the subject. This amounts to saying that new discoveries remain to be made.

The physiologist recognizes that the first step in the explanation of menstrual mechanisms is an understanding of the morphologic characteristics of that part of the peripheral vascular tree which undergoes the menstrual process. This is particularly true today, since newer knowledge of a histologic nature makes it necessary to revise and enlarge the existing ideas concerning menstruation. On one hand Danish workers, notably Okkels and his students Schlegel and Dalgaard, have recently demonstrated in the human endometrium the probable presence of numerous arteriovenous anastomoses (Okkels, 1947;[1] Schlegel, 1945-1946;[2] Dalgaard, 1946[3]). On the other hand Kaiser, studying in the Carnegie laboratory, has noted that certain New World monkeys are lacking in endometrial coiled arterioles in the endometrium at all times of the menstrual cycle (Kaiser, 1947[4]). Since these monkeys do menstruate, it is clear that the basic mechanisms of menstruation are not dependent on the highly specialized structures of spiral arterioles and arteriovenous anastomoses. More will be said of this later.

Until now it has been the fashion to dwell on the coiled, or spiral, arterioles in the endometrium. For orientation, the vascular pattern in the uterus may be compared with the components of the peripheral vascular tree in other parts of the body. These are shown schematically in figures 1 and 2, respectively.

Rea[illegible] "Gynecologic Bleeding" before the Section [illegible] at the Ninety-Sixth Annual Session of the [illegible] Atlantic City, N. J., June 11, 1947.

[1] [illegible] of Endometrial Blood Vessels, in Engle, [illegible]: Conference on Menstrual Diseases, Princeton, Princeton University Press, 1947, to be published.

[2] Schlegel, J. V.: Arterio-Venous Anastomoses in the Endometrium in Man, Acta anat. 1: 1285, 1945-1946.

[3] Dalgaard, J. B.: The Blood Vessels of the Human Endometrium: A Histological Study by Means of Injection and Blood Corpuscle Colouration, Acta obst. et gynec. Scandinav. 26: 342, 1946.

[4] Kaiser, I. H.: Absence of Spiral Arterioles in the Endometrium of Menstruating Platyrrhine Monkeys, Anat. Rec., November 1947, to be published.

In figure 1 the essential features of the peripheral vascular tree in somatic tissues in general are shown (after Zweifach and Shorr[5]). Arterioles, having muscular elements, arise from terminal arteries. The arterioles give rise to three types of vessels, namely, dichotomous branches of arterioles, precapillary arterioles with contractile elements and arteriovenous anastomoses.

In figure 2 are seen the specialized structures which have been described as existing within the human uterus. The myometrium contains the principal arterial and venous supply. The arcuate arteries in the vascular zone give rise to terminal arteries supplying the outer third of the myometrium. The inner two thirds of the myometrium is supplied by branches from the radiate arteries as these pass toward the endometrium. In the endometrium the radiate arteries continue as spiral, or coiled, arterioles. The basalis of the endometrium is supplied by endometrial basilar arterioles, which divide once dichotomously and end in a rich capillary network. The functionalis is supplied by the spiral arterioles. These give rise to few branches until their terminal branching.

When one compares the structural features of the somatic peripheral vascular tree with that in the human uterus, one sees many features in common. The principal differences lie in the presence in the premenstrual human uterus of many supposed arteriovenous anastomoses, numerous endometrial coiled arterioles and extensive, subepithelial, venous and capillary lakes.

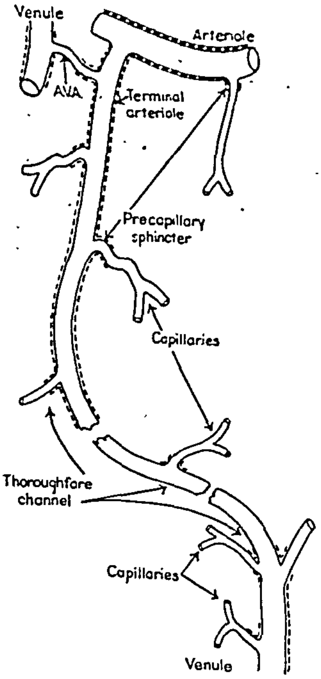


Fig. 1.—Schematic representation of the principal blood vascular elements in the general somatic circulation. Contractile elements are indicated by broken lines. Note contractile elements about precapillary vessels and the arteriovenous anastomoses (A.V.A.). After Zweifach and Shorr.[5]

Of equal importance with the vascular architecture is the seldom emphasized fact that the tissue in which these structures lie is loose and spongy. The vascular elements appear to be developed out of all proportion to the immediate metabolic requirements of such tissue. It is most likely that the vascular arrangement in the endometrium is adapted, as Hasner (1946)[6] has emphasized, to supplying rapidly the placental villi of an invading trophoblast when an ovum begins to become implanted. When a trophoblast fails to develop, however, this complex vascular structure breaks down. It cannot be maintained in the face of the requirements of cyclic endocrine activity, in which ovulation is normally the key point in the pattern. Menstruation will take place, it is true, in anovulatory cycles as is now generally recognized. This is a common occurrence in rhesus, although it is regarded as being uncommon in women during the period of maximum fertility. In either case, however, observations of Daron (1936)[7] show that the sequence of events is the same. The degree of vascular development is much less, however, when a cycle is anovulatory than it is when ovulation and development of a corpus luteum takes place. This has been affirmed in recent studies by Markee (1940)[8] and Kaiser (1947).[9] In either event the demands of cyclic endocrine activity impose the necessity of tearing down the vascular bed in the spongiosa if it cannot fulfil its predestined function of supplying a trophoblast. It is the reason for, and consequence of, this collapse that is of concern here.

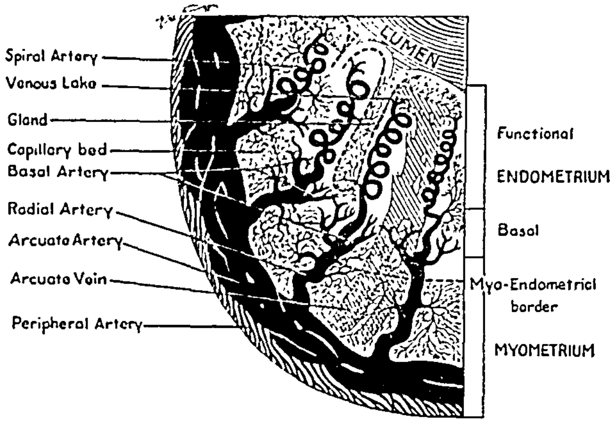


Fig. 2.—Schematic representation of the specialized vascular elements in the human uterus. Note different vascular elements supplying the myometrium, the basal and the functional layers of the endometrium. Based on summary of the literature and illustration of it by Schlegel (1945-1946)[2] and by Okkels and Engle (1938).[11] Note alleged arteriovenous anastomoses into the subepithelial venous lake.

VASCULAR PATTERNS AND THE MENSTRUAL CYCLE

The essential features of the vascular architecture of the human uterus during the menstrual cycle are shown in figure 3. In brief, it may be noted that these are as follows:

During the proliferative phase, one finds that (*a*) there are few coils in the endometrial arterioles and these tend to be restricted to the lower portion of the functional zone; (*b*) collecting veins are very small; (*c*) arteriovenous anastomoses, according to Schlegel (1945-1946),[2] are few, and (*d*) the endometrial glands are straight and proliferating.

During the secretory phase, one finds that (*a*) the coils in the spiral arterioles have increased in number, and they may extend to the upper portion of the functional endometrium; (*b*) collecting venules have increased decidedly in number, especially in the upper portion of the functionalis; (*c*) arteriovenous anastomoses are stated to have increased in number, and (*d*) glands are coiled and secretory, with a rich capillary network about them.

Premenstrually, one finds that (*a*) the spiral arterioles are coiled extensively toward the subepithelial capillary bed, and there are numerous venous and capillary lakes in the subepithelial layer of the endometrium; (*b*) arteriovenous anastomoses are said by Schlegel to be numerous in the vicinity of the terminal branches of the endometrial coiled arterioles; (*c*) collecting veins are of maximum size and number, and (*d*) the capillary bed under the endometrial epithelium is extensive and in general lies with the vessels parallel to the surface.

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[5] Zweifach, B. W., and Shorr, E.: Hormonal Factors on Blood Flow and Arteriolar Activity, in Engle, E. T.: Proceedings of the Conference on Menstrual Disorders, *Princeton, Princeton University Press, to be* published.

[6] Hasner, E.: Endometriets Vasculare Cyklus, Thesis, Copenhagen, Det Berlingske Bogtrykeri, 1946.

[7] Daron, G. H.: Arterial Pattern of the Tunica Mucosa of the Uterus in Macacus Rhesus, Am. J. Anat. **58**: 349, 1936.

[8] Markee, J. E.: Menstruation in Intraocular Endometrial Transplants in the Rhesus Monkey, Contrib. Embryol. **28**: 219, 1940.

[9] Kaiser, I. H.: Histological Appearance of Spiral Arterioles in the Endometrium of Chimpanzee, Baboon, Gibbon, and Rhesus Monkey, Anat. Rec., to be published.

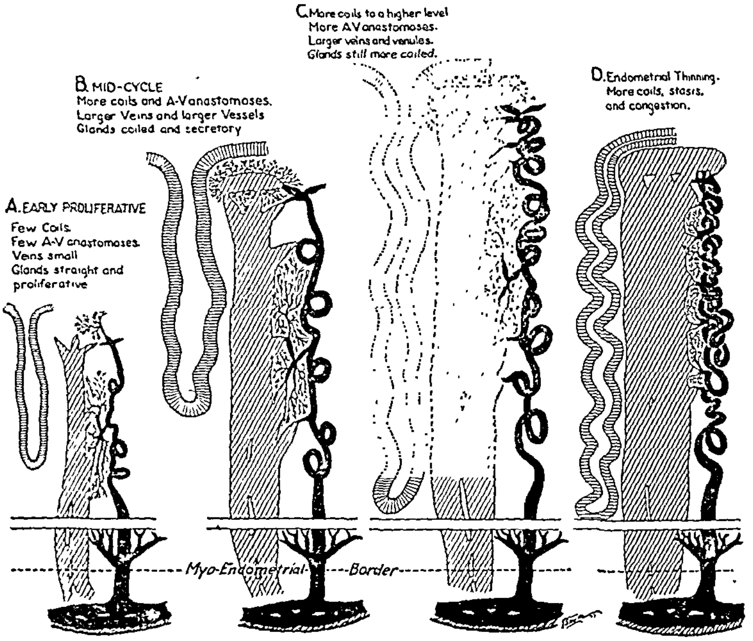
C. More coils to a higher level
More A V anastomoses.
Larger veins and venules.
Glands still more coiled.
B. MID-CYCLE
More coils and A-V anastomoses.
Larger Veins and larger Vessels
Glands coiled and secretory
D. Endometrial Thinning.
More coils, stasis, and congestion.
A. EARLY PROLIFERATIVE
Few Coils
Few A-V anastomoses.
Veins small
Glands straight and proliferative
Myo-Endometrial Border

Fig. 3.—Schematic representation of the development throughout the menstrual cycle of an endometrial spiral, or coiled, arteriole, collecting veins, subepithelial venous lakes and arteriovenous anastomoses described by Schlegel. The basal endometrium, which remains relatively unaffected, is indicated below the break in continuity of the endometrium. Based on descriptive data of Schlegel (1945-46),[2] Markee (1946)[10] and Daron (1936).[7]

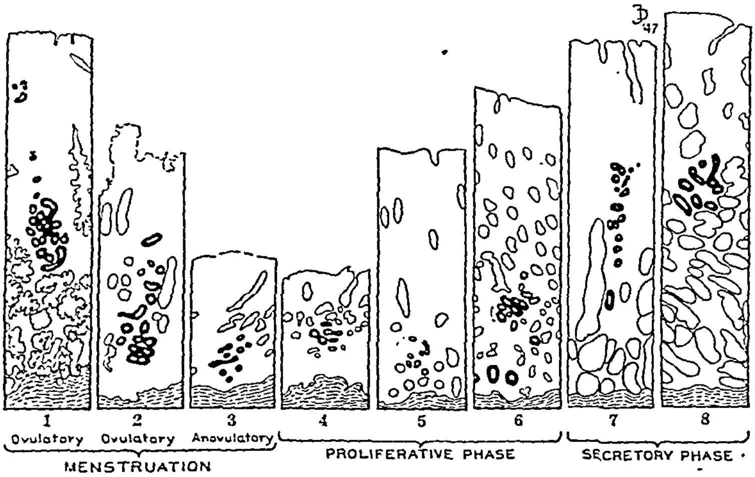

Fig. 4.—Line drawings showing location of endometrial glands and arterioles seen in sections of the endometrial rhesus monkeys. Reduced from camera lucida drawings by Kaiser at a magnification of 25 diameters: (1) first day of menstruation in an ovulatory cycle; (2) second day of menstruation; (3) second day of menstruation in an anovulatory cycle; (4) and (5) early and late proliferative phase; (6) premenstrual endometrium in an anovulatory cycle; (7) midsecretory phase, and (8) premenstrual endometrium, ovulatory cycle.

CYCLIC PHENOMENA AND HORMONAL FACTORS

The relation of cyclic phenomena in the uterus to hormonal factors is a point which has been so frequently and adequately discussed that it will not be treated at length here. It will suffice to indicate this schematically in figure 6. This drawing is based on a similar diagram by Markee (1946). The blood levels and sources of estrogen and progesterone in the blood are shown.[10] The first half of the cycle is associated with rapid growth of the uterine vascular elements under the influence of estrogen. It is a period of tissue repair and proliferation. The groundwork is laid by an increase in the spongy layer of the endometrium for increased coiling of the spiral arterioles later. However, the latter half of the cycle is characterized by secretory activity of the glands and extensive elaboration of the vascular elements that develop in the middle and superficial layers of the endometrium under the influence of estrogen and progesterone, as shown in figure 6.

DEPENDENCE OF UTERINE BLOOD VESSELS ON THE OVARIAN HORMONES

The dependence of the uterine blood vessels on ovarian hormones is a point which requires no elaboration to clinicians. There is a publication by Okkels and Engle (1938),[11] however, which should be familiar to all who are concerned with the problems of menstruation. In short, these investigators have shown that not all uterine blood vessels are equally affected by deprivation of ovarian hormones.

In monkeys extensive fibroelastoid (hyaline) degeneration occurs in response to spaying. The spiral arterioles are much affected, as also are the myometrial radiate arteries and to a less extent the myometrial arcuate arteries. Only the basilar endometrial arteries remain unaffected by deprivation of estrogen, as do the blood vessels of most other parts of the body as far as is now known. These effects are shown schematically in figure 5. This picture also shows that fibroelastoid (hyaline) degeneration may be repaired by appropriate administration of estrogen. Repair requires a long time. Progesterone administered with estrogen has no special effect on maintenance of the fibroelastic tissues of the vascular apparatus in the uterus.

The degenerative vascular changes which have just been described are in response to extreme deprivation of estrogen. Menstruation is the result of a shift in a delicately adjusted balance between growth-promoting stimuli and their withdrawal. What is the nature of these changes?

FUNCTIONAL CHANGES IN THE ENDOMETRIUM DURING MENSTRUATION

The discussion of the functional changes in the endometrium during menstruation will be confined to two points, first, the train of physiologic conditions which leads to menstruation and second, the consequences of a chemical nature in uterine tissues which take place concurrently. Markee (1940)[8] is the primary source of knowledge of the former and Smith and Smith (1947),[12] of the latter. With respect to both points, it is now clear that although the stimulus for growth of uterine blood vessels is blood-borne, the control of menstruation is local.

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[10] Markee, J. E.: Morphological and Endocrine Basis for Menstrual Bleeding: Progress in Gynecology, New York, Grune & Stratton, Inc., 1946, p. 37.

[11] Okkels, H., and Engle, E. T.: Studies on the Finer Structure of the Uterine Blood Vessels of the Macacus Monkey, Acta path. et microbiol. Scandinav. **15:** 150, 1938.

Markee has advanced the view now widely held that menstruation in the primate uterus takes place whenever there is a period of rapid and sufficiently long regression or thinning of the endometrium. Withdrawal of the stimulus for uterine growth provided by estrogen and progesterone leads to such regression. Rapid regression of the endometrium gives rise to a series of changes prior to, and essential for, menstruation. This involves:

(*a*) Thinning of the mucosa. This is largely attributable to loss of water from the spongiosa.

(*b*) Increased coiling of the spiral vessels. As many as twenty new coils in each arteriole may appear at this juncture, as the elastic elements of the arterioles become shortened when the endometrium becomes thinner.

(*c*) Dilatation of coiled arterioles.

(*d*) Leukocytic infiltration of adjacent tissues and edema in subepithelial tissues.

(*e*) Local necrosis.

(*f*) Local production of a substance which causes intense vasoconstriction of the endometrial blood vessels. This was shown by Markee (1940)[8] who employed endometrial transplants of the monkey into the anterior chamber of the eye. He observed that when there was intense local constriction of the blood vessels in the transplants there was at the same time dilatation of the blood vessels in adjacent parts of the eye. From a variety of such experiments the facts of premenstrual regression (thinning), stasis and localized vasoconstriction have been established.

(*g*) Formation of subepithelial hematomas locally in the endometrium after six to twenty-four hours of vasoconstriction.

(*h*) Necrosis and rupture of the hematomas. Bleeding may last for some twenty-five to seventy minutes.

(*i*) Bleeding as a series of localized hemorrhages with blood escaping in any of several different ways. It may occur as diapedesis; as direct escape from capillaries or arterioles, or as venous hemorrhages. Of these, 22 per cent. of hemorrhages observed by Markee in the monkey were venous hemorrhages. They lasted on the average for forty-seven minutes, in contrast to the other types of bleeding which lasted only a few minutes.

(*j*) Decided slowing in the rate of blood flow in the capillaries.

(*k*) Desquamation of mucosal tissues as a sequel to the intense vascular crisis.

The menstrual process, according to Markee, depends on four essential conditions in the foregoing train of events. These are thinning of the endometrium, increased coiling of the spiral, or coiled, arterioles, hemostasis and intense vasoconstriction. These phenomena have been studied objectively, and no one can doubt their correctness for the rhesus monkey; also, these phenomena on which menstruation depends apply, no doubt, for all other species having endometrial coiled arterioles. There are, nevertheless, two fundamental points which require examination before one can accept this point of view without qualification.

In the first place, Markee's work does not allow for the existence and possible role of arteriovenous anastomoses in the human endometrium. However, Bartelmez maintains that they do not exist in Macacus rhesus (Bartelmez, 1947 [13]). These structures are present, as has been shown, in the superficial layers of the functionalis in the human being in increasing numbers as the menstrual cycle advances. One must also suppose, in agreement with Schlegel (1945-1946),[2] that these structures, if present, are indeed functional and not histologic ornaments. The effect of their activity would be, as with arteriovenous anastomoses elsewhere in the body, to shunt blood away from a peripheral capillary bed. This could conceivably contribute to the initial capillary stasis of menstruation in the superficial part of the endometrium. The presence of extensive venous lakes in the subepithelial portion of the uterine mucosa bears testimony to the fact that venous pressure is relatively high, and the circulation of blood in the capillaries of this area must be decreased accordingly.

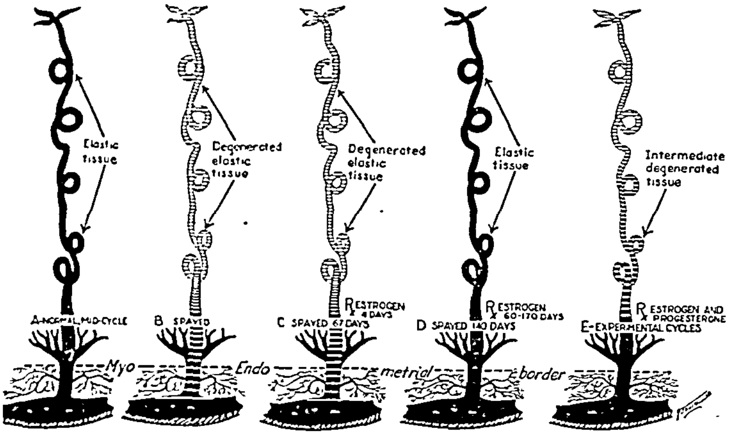

Fig. 5.—Schematic representation of the different susceptibility of the uterine arteries and arterioles to prolonged estrogen deprivation. The cross hatched areas signify fibroelastoid (hyaline degeneration of elastic connective tissue. Note that only the coiled and radiate arteries are affected and that prolonged treatment with estrogen is necessary for restoration of the elastic tissue. Based on the work of Okkels and Engle (1938).[11]

In the second place, the concept of menstruation advanced so effectively by Markee on the basis of his observations in the rhesus monkey neglects the fact that at least three species of New World monkeys possess no spiral, or coiled, arterioles in their endometria (Kaiser, 1947 [4]). Nevertheless, these monkeys manifest microscopic bleeding at periodic intervals (Hamlett, 1939;[14] Goodman and Wislocki, 1935 [15]), and they exhibit periodic desquamation of the endometrium (Goodman and Wislocki, 1935;[15] compare Kaiser, 1947 [4]). These conditions are in accordance with the basic and acceptable definition of menstruation set forth by Bartelmez (1937 [16]), in his article on the mechanism of menstruation, in which he stated: "Menstruation is a bloody discharge associated with necrosis of the uterine mucosa, recurring, in the absence of pregnancy, at intervals of from three and one-half

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12. Smith, G. S., and Smith, O. W.: Menstrual Toxin, in Engle, E. T.: Proceedings of the Conference on Menstrual Disorders, Princeton, Princeton University Press, 1947, to be published.

13. Bartelmez, G. W.: The Mechanism of Menstruation, Anat. Rec. **97**: 64, 1947.

14. Hamlett, G. W. D.: Reproduction in American Monkeys: I. Estrous Cycle, Ovulation and Menstruation in Cebus, Anat. Rec. **73**: 171, 1939.

15. Goodman, L., and Wislocki, G. B.: Cyclical Uterine Bleeding in a New World Monkey (Atales Geoffroyi), Anat. Rec. **61**: 379, 1935.

16. Bartelmez, G. W.: Menstruation, Physiol. Rev. **17**: 28, 1937.

to five weeks in certain primates." Figure 7 illustrates menstruating endometrium from one of the cebus monkeys described by Kaiser (1947).[4] These tissues are devoid of spiral arterioles, as were those of preparations made from 73 New World monkeys studied by Kaiser (1947).[4] The quantity of tissue desquamated and the amount of blood discharged is undeniably less in New World monkeys than it is in the rhesus monkey and in the human being. This is not, however, a denial of the fact that menstruation does occur in these forms. Rather, it is merely a statement to the effect that the amount of tissue to be shed in order to effect a transition from a secretory to a proliferative endometrium is substantially less in primates without endometrial coiled arterioles than it is in those possessing complex vascular structures in their endometria.[17]

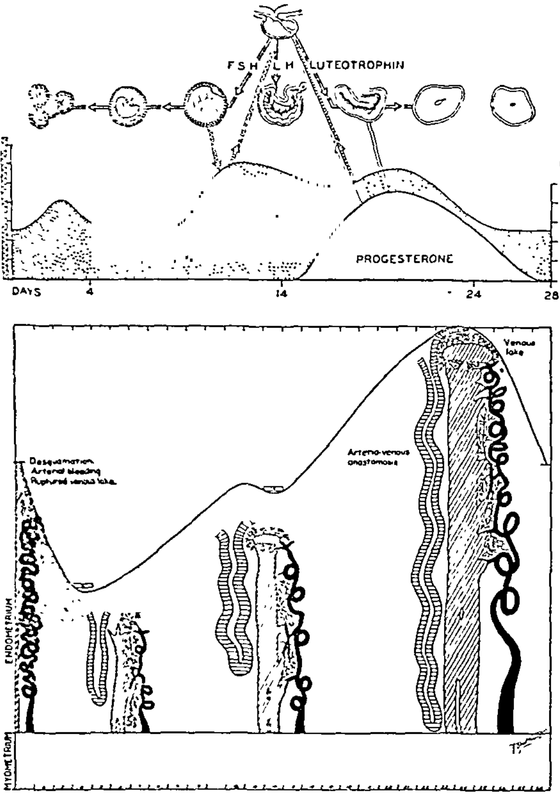

Fig. 6.—Schematic representation of the relation of cyclic vascular changes in the uterus to the chief hormonal factors with which these are associated. Based on a diagram by Markee (1946).[10]

THE MENSTRUAL MECHANISM

The foregoing array of facts affords one a working hypothesis on which to build a concept of the menstrual mechanism. Briefly stated, this is as follows:

1. In the absence of a fertilized ovum, the growth-promoting action of the ovarian hormones on the uterine mucosa is withdrawn.

2. Regression, or thinning of the endometrium, sets in as a consequence of the foregoing hormonal changes. In those forms having no endometrial coiled arterioles, edema and slight desquamation takes place. In those having highly specialized vascular structures in their endometria, reliable investigation has demonstrated the fact that increased coiling of the spiral arterioles occurs as a consequence of withdrawal of the growth stimulus to the endometrium and thinning of this tissue. Altered hemodynamic factors, concerning which no objective facts are available, contribute to capillary stasis, tissue edema and leukocytic infiltration of the tissues. As would result elsewhere in the body when there is ischemia, there occurs in the endometrium local accumulation of the usual products of the degeneration of tissue and protein. Such substances, as Markee observed, proceed to give rise to intense constriction of the endometrial spiral, or coiled, arterioles.

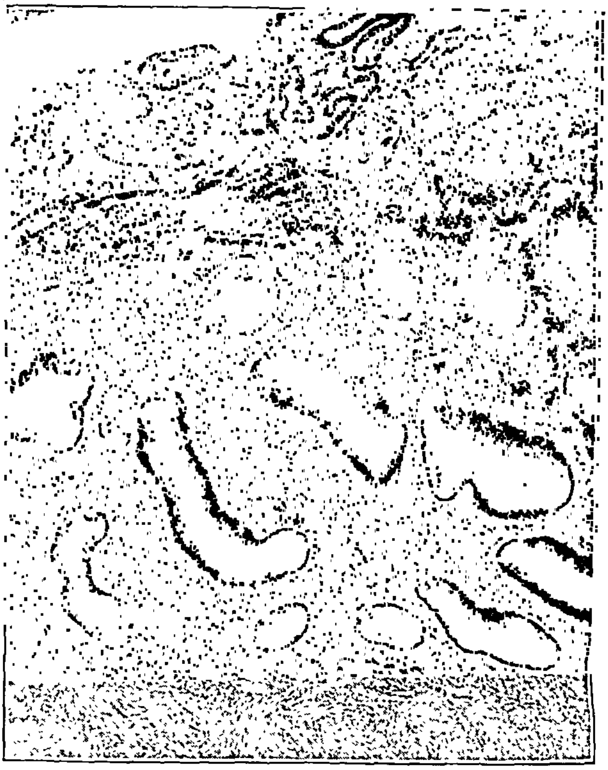

Fig. 7.—Histologic section of endometrium of a New World monkey (cebus) on the first day of menstruation. No spiral or coiled arterioles were present in such endometria; photomicrograph slightly reduced from a magnification of × 60; see Kaiser[4] for details.

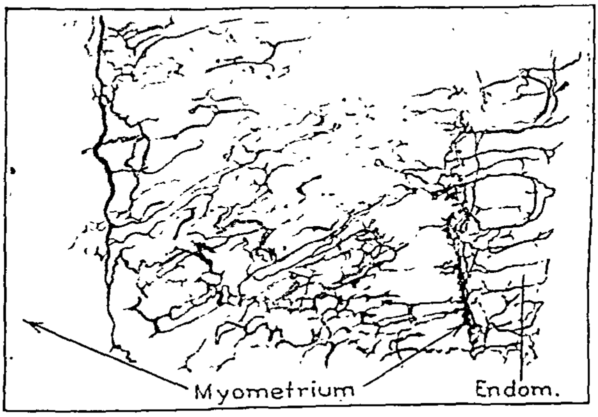

Fig. 8.—Lymphatic network drawn from a reconstruction of serial sections of the uterus of the rhesus monkey. Lymphatics were found in other preparations in the outer zone of the myometrium but never in the superficial fourth (subepithelial portion) of the endometrium. From Wislocki and Dempsey (1939).[18]

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[17] For discussion of the special case of the gibbon, refer to Kaiser.[4]

In the foregoing concept there exists a situation in which local necrosis must occur. The local circulation is not sustained, there is transudation of fluids, and substances are produced which favor further destruction of the local tissues. Thus in either type of menstruation—that which is not associated with endometrial coiled arterioles or that which is associated with them—there is a deficient mechanism whereby transuded plasma proteins, which are the sine qua non of edema, fail to be removed. This fact suggests, accordingly, that the key to an understanding of menstrual mechanisms lies in a knowledge of the characteristics of the lymphatic drainage of the endometrium. Little is known concerning this topic. The only description available with regard to the distribution of lymphatic vessels within the primate endometrium is that of Wislocki and Dempsey (1939),[18] who have shown that endometrial lymph vessels in a nearly mature rhesus monkey were confined to the bottom three fourths of the endometrium. The superficial fourth of the endometrium was devoid of lymphatic capillaries. This is shown in figure 8. There is, therefore, a morphologic basis for expecting that subepithelial edema with attendant necrosis and desquamation may be associated with a deficient mechanism for removal of plasma proteins from interstitial spaces. Thus this may be the key functional point around which menstruation revolves. Clearly, more work should be done to test the validity of such an assumption.

A MENSTRUAL TOXIN?

In conclusion, reference must be made to the important work of Smith and Smith (1947)[12] on the subject of a so-called menstrual toxin. These investigators have established that a substance is contained in menstrual discharge which is highly toxic when injected into rats. It kills them within twenty-four hours.

This active substance in menstrual discharge is a euglobulin. It is found in greatest concentration in the cellular debris fraction of menstrual centrifugate. It is present in highest concentration in early menstruation but diminishes in amount as the quantity of menstrual discharge increases. The toxin has been found in fresh endometrium prior to the onset of actual bleeding, although it is not present at other times in the menstrual cycle. It is present whether the cycle has been ovulatory or anovulatory.

There is no question concerning the validity of the foregoing facts. They have been established by objective tests. There are two reservations, however, which must be made in connection with them. First, the precepts of sound logic require that one refrain from stating that this toxin is the cause of the onset of menstruation. It has been seen that menstruation is the result of a series of integrated effects resulting from the special structural and functional features found within the endometrium. Second, if the euglobulin which Smith and Smith have demonstrated to be present in menstrual discharge is in fact related to the intense vasoconstriction which Markee has shown to be part of the whole process, then it might well be called something other than a toxin, since it subserves a physiologic role during the sex cycle.

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18. Wislocki, G. B., and Dempsey, E. W.: Remarks on the Lymphatics of the Reproductive Tract of the Female Rhesus Monkey (Macaca Mulatta), Anat. Rec. **75**: 341, 1939.

MENOMETRORRHAGIA DURING ADOLESCENCE

C. F. FLUHMANN, M.D.
San Francisco

Any consideration of menometrorrhagia during adolescence and conditions associated with this age group requires that attention be directed to distinguishing between the terms adolescence, menarche, puberty and maturity, because they have been employed loosely and invariably as being synonymous. Adolescence has been defined as "the process or condition of growing up . . . the period between childhood and maturity." It therefore includes the latter part of the growth period and the transition to complete somatic and sexual maturity. During this time there are important changes in the organs of internal secretion, a gradual cessation of increase in stature, a psychic transformation and the acquisition of the secondary sexual characters. The appearance of the first menstruation, the menarche, normally is one of the most important events of this epoch and is readily recognized, but it is not the end point of these various processes. On the other hand, maturity implies that the young woman has attained the completion of somatic growth and has acquired the capability of bearing children. It usually is reached some years after the menarche. The word puberty is still more confusing, as it has received many definitions, some, unfortunately, with the assistance of sentimental popular novelists. It would be desirable to drop the word puberty from medical literature unless it is limited and generally accepted as referring to some definite period. One suggestion is to limit the term to the months or years which extend from the menarche to maturity.

ABNORMAL UTERINE BLEEDING

It is most unfortunate that such terms as puberty bleeding and menopausal bleeding are in constant usage, since they are actually nonentities. There is no such thing as puberty bleeding or adolescent bleeding, since there is no single specific factor concerned; the terms merely serve as a clue to the age of the patient or patients concerned. It is important to remember that any of the various causes which lead to abnormal uterine hemorrhage may be effective at any time from the menarche to the menopause. Instances have been reported of bleeding during adolescence from fibromyomata uteri, adenomyoma, inflammatory lesions of the pelvic organs, incomplete abortion, systemic diseases, such as purpura hemorrhagica, and endocrine dyscrasias. Pollock and Taylor [1] found in the literature 30 cases of cancer of the cervix uteri occurring during the first two decades and added 1 of their own. Traina-Rao and Pesce [2] in a series of patients with cancer of the cervix observed that the youngest was 14 years of age and that 0.14 per cent were from 10 to 20 years of age.

Although there is no single specific causative factor for menorrhagia or metrorrhagia during adolescence there is a definite relationship between the etiologic

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From the Department of Obstetrics and Gynecology, Stanford University School of Medicine.

Read in a panel discussion on "Gynecologic Bleeding" before the Section on Obstetrics and Gynecology at the Ninety-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., June 11, 1947.

1. Pollock, R. S., and Taylor, H. C., Jr.: Cancer of the Cervix During First Two Decades of Life, Am. J. Obst. & Gynec. **53**: 135 (Jan.) 1947.

2. Traina-Rao and Pesce, V. S.: Cancer of the Cervix with Special Reference to Young Women, Clin. ostet. **47**: 149, 1945.

factors and the frequency of their occurrence. It is of importance to be aware of the different lesions just mentioned, but at this age period they are unusual events; in the vast majority of instances the bleeding stems from the nature of the early menstrual cycles and the existence of an endocrine disorder which leads to hyperplasia endometrii.

EARLY MENSTRUAL CYCLES

The appearance of the first episode of cyclic uterine bleeding does not necessarily mean that menstruation with a complete ovarian cycle has become established. As Hartman[3] has stated, "there is a gradual process as the adolescent female gets her stride, as it were, in the matter of her menstrual regularity and the sexual cycle in general." This feature is demonstrated clinically by the fact that the early cycles are particularly prone to be irregular, with frequent periods of amenorrhea and at times profuse and prolonged menstruation. For the first few years, in spite of the occasional occurrence of gestation in young girls, there is also a relative sterility (Hartman[3]). With child marriages of India cohabitation begins at the menarche, but it is stated that usually the first child is not born until the third year of effective marriage. It is remarkable also that among peoples such as the Trobriand islanders and the Igorots and Bontoks of the Philippine Islands, pregnancy in young unmarried girls is extremely rare despite the absolutely unrestrained and promiscuous sex life which begins in childhood.

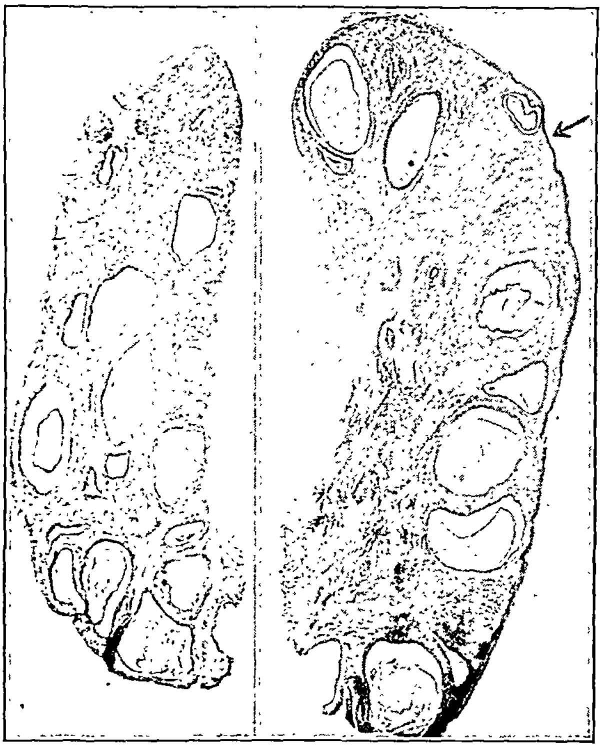

Fig. 1.—Degenerating corpus luteum (arrow) in ovary of a girl aged 12 who died of a cerebral hemorrhage. The opposite ovary shows only atretic follicles. *She had had four menstrual periods and this is offered as evidence that ovulation occurred only once during this time.* After Laqueur.[10]

These observations are associated with the occurrence of a preponderance of anovulatory cycles at this age period. At such times cyclic uterine bleeding is present but ovulation does not take place; the ovaries do not contain an active corpus luteum, and the endometrium is in the stage of proliferation observed after estrogenic stimulation. The incidence of such cycles was first demonstrated in the Macacus rhesus monkey by Corner,[4] Hartman[3] and Edgar Allen,[5] but evidence has accumulated to show that these cycles are also found in the human subject (Corner,[6] Bartelmez,[7] Mazer and Ziserman[8] and Novak.[9] An excellent example is the case recently reported by Laqueur[10] of a girl aged 12 who died after a spontaneous intracerebral hemorrhage. She had had four menstrual periods immediately prior to her death, and examination of the ovaries showed the presence of only one degenerating corpus luteum, thus indicating that ovulation had occurred only once (fig. 1).

HYPERPLASIA ENDOMETRII

The most frequent cause of unduly prolonged or profuse cyclic and acyclic uterine bleeding which may occur during both early and late menstrual life is an endocrine disturbance of a somewhat obscure origin. In this country it is generally referred to by the name applied to the histologic appearance of the endometrium, namely, hyperplasia endometrii, and all attempts to give it some connotation referring to a systemic endocrine disturbance, such as metropathia hemorrhagica, have failed to gain general acceptance. Nevertheless, this disorder must be recognized as the most important but not the sole factor producing pathologic uterine bleeding in the postmenarcheal and premenopausal periods of life.

Although one is tempted to draw comparisons between anovulatory menstruation and hyperplasia endometrii there are such distinct differences between the two, both clinically and in the histopathologic observations in the endometrium, that the latter must be considered as a separate pathologic entity. It is unfortunate that it does not occur spontaneously in monkeys, as the anatomists possibly could give much assistance, but the best they have offered so far is to reproduce a similar lesion by the use of massive doses of estrogenic hormones in castrates.

During the postmenarcheal period hyperplasia endometrii manifests itself by abnormal uterine bleeding. Usually it appears as cyclic bleeding occurring at longer or shorter intervals, and not only is it extremely profuse but it may persist for many days longer than average menstrual periods. At times the bleeding follows amenorrhea of many weeks' or months' duration. In still other instances the flow is slight but continuous over long periods of time. It is important to note that the bleeding in these cases is not accompanied by pain, while the occurrence of dysmenorrhea is generally associated with ovulatory cycles.

The clinical examination of patients with hyperplasia endometrii does not usually bring to light any significant observations. The development of the secondary sexual characters is invariably complete; there is no characteristic pattern as to stature or weight, nor are there endocrine stigmas. Rectal or vaginal examination may reveal a slightly enlarged and soft uterus, but this observation at this age is not constant.[11] Often there is a lowering of the basal metabolic rate, but other laboratory investigations offer no assistance except for the low blood count which naturally accompanies the anemia produced by the frequent hemorrhages.

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[3] Hartman, C. G.: Studies in the Reproduction of the Monkey Macacus Rhesus, Contrib. Embryol. **134**: 1-161 (Aug.) 1932.

[4] Corner, G. W.: Ovulation and Menstruation in M. Rhesus, Contrib. Embryol. **75**: 75-101, 1923.

[5] Allen, E.: The Menstrual Cycle of the Monkey, Contrib. Embryol. **98**: 1-44, 1927.

[6] Corner, G. W.: Relationship Between Menstruation and Ovulation in the Monkey, J. A. M. A. **89**: 1838 (Nov. 26) 1927.

[7] Bartelmez, G. W.: Histological Studies on the Menstruating Mucous Membrane of the Human Uterus; Contrib. Embryol. **142**: 141-186 (Sept.) 1933.

[8] Mazer, C., and Ziserman, A. J.: Pseudo-Menstruation in Human Female, Am. J. Surg. **8**: 332 (Nov.) 1932.

[9] Novak, E.: Clinical Syndromes Referable to failure of Ovulation, Am. J. Obst. & Gynec. **37**: 605 (April) 1939.

[10] Laqueur, G. L.: Anatomical Demonstration of the Anovulatory Menstrual Cycle, California & West. Med. **63**: 268 (Dec.) 1945.

The pathologic changes in the endometrium and the ovaries have been the subject of many studies since those of Robert in 1846, Olshausen in 1875, Bischoff in 1878, Brennecke in 1882 and Cullen in 1900. In more recent times concepts have been based on the work of Schroeder [12] in 1915 and Meyer [13] in 1920, followed by that of a host of investigators, to mention only a few, Novak, Seitz, Shaw, Fluhmann, Tietze, Burch, Jeffcoate and Payne.

The ovaries are sometimes slightly enlarged and may be palpable. On histologic examination their appearance is strongly reminiscent of that observed in women who have had a number of anovulatory cycles such as in the case reported by Laqueur.[10] The most characteristic feature is the absence of active corpora lutea, and in instances of long standing there is no evidence of recent ovulation. The ovaries contain graafian follicles in various stages of development, some with well preserved granulosal and thecal layers but mostly showing all stages of atresia. Since each gonad may display as many as ten to thirty cysts of this type the general picture conforms with the classic description of "cystic degeneration of the ovaries."

It is in the endometrium, however, that one must look for the striking manifestations of this disease. The endometrium grossly is likely to be thickened and edematous, and large amounts of tissue may be obtained on curettage. The final diagnosis is made on histologic examination, and I consider that a differentiation must be made on whether the specimen is obtained at a time when the patient is in a quiescent stage or actually bleeding. The stroma is dense and cellular, the cells are spindle shaped, and active proliferation is evidenced by numerous mitotic figures. The presence of many large blood vessels is a prominent feature, and in some instances there are decidedly dilated veins under the surface epithelium. There are several types of glands which are arranged in a totally disorderly fashion. First, there are glands with a single layer of cylindric epithelium, identical with those normally found during the stage of proliferation. Second, glands with stratified epithelium reflect the pronounced growth activity so characteristic of this disease and at times make one suspect the existence of cancer. Third, cystic glands lined with a low cuboidal epithelium are an important characteristic, and the gross appearance which they impart to the uterine mucosa led Novak to refer to a "Swiss-cheeze" pattern of this lesion. Whenever the specimen of endometrium is obtained while the patient is actually bleeding additional features are observed, namely, areas of necrosis with thrombosis of neighboring blood vessels and an extensive infiltration with leukocytes.

The actual cause of hyperplasia is not known, although it has been suggested that it may result from a disordered anterior hypophysial activity characterized by the production of excessive amounts of the follicle-stimulating hormone and diminished or absent formation of the luteinizing factor. At any rate, there is ample evidence that the endometrial picture is due to estrogenic stimulation in the absence of the corpus luteum factor. It was once thought that it was the direct result of an overproduction of estrogen, and the term hyperestrinism was coined (Fluhmann [14]). However, studies of the estrogenic content of blood have failed to substantiate this theory. In fact, the blood of many patients during the nonbleeding phase manifests a low estrogen content, and there even may be a cycle in its production (Fluhmann [15]). It is of special interest that some women have shown a gradual increase in the amount of estrogen demonstrable just before the onset of a hemorrhagic episode (*fig.* 2), and with the subsidence of the bleeding there has been a corresponding drop in the hormone level (Fluhmann [16]).

When hyperplasia endometrii occurs in young women it is essentially a self limited disease, and ovulation with a restoration of normal menses is to be anticipated. Of 15 juvenile patients observed over many years Klingelhöfer [17] found that only 3 gave any evidence of ovarian disturbance in later life. However, it is of importance to remember that hyperplasia may persist for many months or years, during which time the patient should be under constant surveillance.

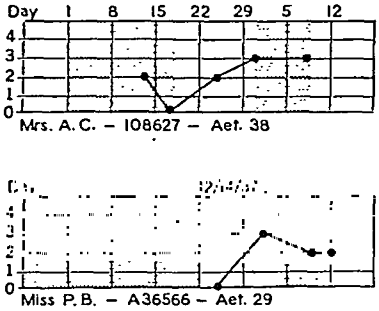

Fig. 2.—Rise in the blood estrogen level with the onset of a hemorrhagic episode in hyperplasia of the endometrium. (Fluhmann [15]).

The treatment should have two aims. First, any anemia resulting from the hemorrhage must be combated with suitable medicaments containing iron, and it may even be necessary to resort to blood transfusions. Second, attempts should be made to control the bleeding, and in adolescent girls the methods at present in vogue are in the main endocrine measures. However, when the diagnosis is obscure, or in occasional intractable cases, a curettage is indicated and may be repeated. A hysterectomy is only resorted to in extremis, and the only instances I know in which it has been performed have been in patients neglected for long periods of time. Although still advocated by some physicians I am opposed to irradiation either with roentgen rays or radium, even at small dosages, because of possible injury to the ovaries and potential harm to the germ plasm, which may manifest itself in the offspring of the second or later generations.

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[11] In extremely infrequent instances the lesion is a direct result of a granulosa cell tumor of the ovary, which may be palpable.

[12] Schroeder, R.: Pathologic Studies of the Menstrual Cycle, Arch. f. Gynak. **104:** 27, 1915.

[13] Meyer, R.: Normal and Pathological Ovulation, Arch. f. Gynäk. **113:** 259, 1920.

[14] Fluhmann, C. F.: Hyperplasia of the Endometrium and the Hormones of the Anterior Hypophysis and the Ovaries, Surg., Gynec. & Obst. **52:** 1051 (June) 1931.

[15] Fluhmann, C. F.: Menstrual Disorders, Philadelphia, W. B. Saunders Company, 1939.

[16] (*a*) Fluhmann, C. F.: *Estrogenic Substances in the Blood of* Women, Am. J. Obst. Gynec. **32:** 612 (Oct.) 1936. (*b*) Fluhmann.[15]

[17] Klingelhöfer, W.: Later Consequences of Juvenile Bleeding, Zentralbl. f. Gynäk. **65:** 743 (April) 1941.

Of the endocrine preparations of value thyroid extract still remains the most valuable in patients with low basal metabolic rates, and it should be administered to the point of tolerance. Its usage in the absence of any evidence of hypothyroidism is definitely open to question. The anterior pituitary preparations available today are of no value and in some instances appear to intensify the episodes of bleeding. Chorionic gonadotropin long has been recommended, but its employment has been abandoned by most authorities. If it is used it must be given at a time when bleeding is present and at large dosages, such as 1,000 or 2,000 international units a day.

It is remarkable that large doses of either estrogen or progesterone are extremely effective in the control of the bleeding. Their employment over several months for a few days at the start of each bleeding period may also prove of curative value, but the importance of large dosages at such times cannot be overemphasized. Karnaky[18] first advocated the employment of diethylstilbestrol for this purpose, but the nausea and vomiting which this substance often induces is a considerable disadvantage. However, the natural estrogens may be used provided adequate dosages are supplied (for example, 20,000 units of estrone daily or 2.5 mg. estradiol dipropionate or 3.0 mg. estradiol benzoate). Progesterone is used in a similar way and is given at dosages of 10 mg. daily intramuscularly for four or five days. Pregneninolone is also valuable, but 40 to 50 mg. must be taken orally for from five to ten days. Either of these preparations invariably lead to a rapid cessation of the bleeding, but some six or ten days later a moderate flow for a few days often occurs, and the patient must be warned of this possibility. If it does not become protracted no treatment is indicated. The explanation for this secondary bleeding is that a stage of secretion has been superimposed on the hyperplastic endometrium and an artificial menstruation has been produced. Since this results in a desquamation of the endometrium Jones and Te Linde[19] refer to this treatment as inducing a "medical curettage." Although the androgens have a place in functional bleeding in older women they are contraindicated in this age group because of the adverse effects which may result from prolonged treatment.

SUMMARY

Abnormal uterine bleeding is of frequent occurrence during the years immediately following the menarche and may result from any of the lesions found during active sexual life. The most frequent cause, however, is the incomplete ovarian function characteristic of this age period and the endocrine disorder known as hyperplasia of the endometrium. The clinical history, diagnosis and treatment of hyperplasia endometrii are given.

490 Post Street.

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[18] Karnaky, K. J.: Endocrines in Gynecology and Obstetrics, Texas State J. Med. **36**: 379 (Sept.) 1940.

[19] Jones, G. E. S., and Te Linde, R. W.: An Evaluation of Progesterone Therapy in the Treatment of Endometrial Hyperplasia, Bull. Johns Hopkins Hosp. **71**: 282 (Nov.) 1942.

FUNCTIONAL BLEEDING

ARTHUR H. CURTIS, M.D.
Chicago

Definition.—Functional bleeding is loss of blood from the uterus without demonstrable pathologic cause. The term must include normal menstruation. No amount of logic or argument can confute that statement, despite the fact that physicians all prefer to limit the meaning of the term functional bleeding to abnormal loss of blood. A satisfactory explanation of the physiologic basis of normal menstruation, although not yet complete in some essentials, must serve as a basis for adequate understanding of menstrual abnormalities.

In common parlance, functional bleeding includes all cases of excessive uterine flow ascribable to endocrinopathic disturbances except those in which there are tumors of the endocrine glands. It does not include bleeding caused by high blood pressure, blood dyscrasias and other recognizable systemic affections.

Special Factors in Abnormal Functional Bleeding.—In consideration of the causes of abnormal functional bleeding, I shall not elaborate on the accepted belief that pituitary or hypothalamic dysfunction may cause bleeding through excessive stimulation or inadequate control of ovarian activity, particularly in the elaboration of estrogen; nor need I emphasize that bleeding may occur because of failure of the ovary to respond to pituitary gonadotropic stimulation. That fluctuation in the estrogen level, rather than hyperestrinism or prolonged uninterrupted action of estrogen, is responsible for bleeding is common knowledge.

Absence of ovulation with consequent deprivation of progesterone is common during adolescence and during the period of waning ovarian activity at the menopause. At these times without ovulation the uninterrupted action of estrogen tends to be rather self limited: there is almost never endangering menopausal bleeding from this factor alone, but during adolescence the functional flow may be serious.

Although abnormalities of the hormonal rhythm during adolescence and at the menopause are well known, it is apparently not recognized that menorrhagia tends also to occur at the time when ovarian activity begins to falter, usually at an age of from 36 to 38 years. To this last-named period I apply the term "little menopause." Menorrhagia at this time affects particularly those who have led lives of frustration, sexually or otherwise; those with lesser endocrine disturbances; those with endocervicitis, and those with a familial history of menorrhagia.

Intractable bleeding of the menopause, sufficient to demand intervention, is seldom purely functional. Persistent profuse flow bespeaks a pathologic condition, often small myomas which elude identification and are recognized only on palpation with the patient under anesthesia or on dilatation and curettage or on opening the uterus after hysterectomy.

The aim of this article is to assess all practical information pertinent to functional bleeding. Therefore, at this juncture I am impelled to pause for a moment to consider one affection—high blood pressure—in

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From the Department of Obstetrics and Gynecology, Northwestern University Medical School, and Passavant Memorial Hospital.

Read in a panel discussion on "Gynecologic Bleeding" before the Section on Obstetrics and Gynecology at the Ninety-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., June 11, 1947.

relation to postmenopausal uterine bleeding. I was surprised at a statement made recently in Chicago,[1] that high blood pressure is not a cause of uterine bleeding, for I have seen many instances of otherwise inexplicable hemorrhage after the menopause in which a pressure of 185 mm. of mercury or more has been the only demonstrable lesion.

Diagnosis.—For clinical purposes, let me evaluate those measures which are of assistance in making an accurate diagnosis of the cause of bleeding and devaluate those which are chiefly of academic interest:

A pelvic examination should include rectovaginal palpation, for the latter gives much more accurate information than does vaginal examination alone.

I am impressed that special endocrine studies are not necessary in the diagnosis of functional bleeding and that diagnostic curettage is required chiefly for recognition of tumors, particularly cancer.

Estrogenic therapy has completely disoriented the medical appraisal of menopausal bleeding: Smears from those who have received enough estrogen to produce bleeding often reveal evidence of cellular activity suggestive of cancer; the uterine curettings may yield patterns simulating adenocarcinoma enough to confuse even an experienced pathologist; the increase in induration, bulk and weight of the uterus is often deceptive. In view of all these factors in bleeding patients who have been receiving estrogenic therapy, discontinuance of the medicament and expectant care for three weeks or more is preferable to immediate diagnostic intervention with unqualified interpretation of the evidence.

Since the advent of "dicumarol" it has been observed that salicylates also have a tendency to produce hemorrhage. Routine inquiry about the amount of acetylsalicylic acid taken by patients who consult the physician for vesical or uterine bleeding permits an occasional diagnosis of otherwise inexplicable functional bleeding.

Elimination of the Hazard of Cancer.—Vaginal smears to rule out otherwise undetectable cancer are an asset, but I must emphasize that the dependability of skilled examination of cervical and vaginal smears in search for evidence of uterine cancer has been overstressed. For example, metaplasia of the cervical epithelium is of common incidence, and isolated cells or groups of cells sloughed from the metaplastic cervix may defy differentiation from malignant cells. This is particularly true if the patient has received estrogenic therapy.

Cervical biopsy for elimination of cancer is a diagnostic asset. Failure to remove a specimen for biopsy preliminary to office cauterization of a dubious cervical lesion is unwise.

TREATMENT

Therapeutic Curettage.—The percentage of cures incident to therapeutic curettage varies directly with the frequency with which one resorts to this procedure. The majority of patients with functional bleeding recover spontaneously; if one curets only those with intractable bleeding, the prospect of relief is scarcely worth the expense of hospitalization unless the procedure is indicated also to determine whether there is a submucous tumor or a malignant growth. To my mind therapeutic curettage in the earlier stages of functional bleeding is in a measure comparable with curettage after spontaneous abortion, which is often a race to determine whether the physician can get the patient to the hospital before bleeding ceases.

Hemostatic Therapy.—My experience with ergot preparations is that they are of limited value in hemostasis. Vitamins B, C (ascorbic acid) and K are in an experimental stage. Commonly accepted measures for the control of anemia require no discussion here.

Radiation Therapy.—Treatment by radiation has lost much of its appeal except in the care of cancer, but surely it merits a permanent place in the therapy of menopausal bleeding, irrespective of whether myomas of small size are present. Preliminary curettage is essential.

Hormonal Therapy.—The value of thyroid medication in selected cases of functional bleeding is widely accepted and requires no further comment.

At no time in the history of gynecology has there been so much confusion regarding other hormonal therapy. If sex hormones are to be employed, some divergence of opinion centers about whether estrogens or androgens are preferable. In evaluation of the rather widespread belief that male hormones are unnatural and harmful to women, certain facts merit mention: Androgens are produced, are metabolized and are excreted by the normal woman. Almost as much androgen is found in the urine of the normal human female as in that of the male. The hazard of masculinization from judicious androgenic therapy has been overstressed.

Prior to further elucidation of the physiology of the sex hormones and more satisfactory demonstration of the efficacy of specific products, I have found it preferable to avoid substances, notably estrogens, which tend to increase the size and activity of the uterus and endometrium. It is known that testosterone inhibits pituitary gonadotropic activity and that it has a direct inhibiting effect on the uterine musculature. And, in any event, it controls bleeding and accomplishes it without producing palpable enlargement of the uterus and hypertrophy of the endometrium.

The routine procedure is the administration of three 10 mg. tablets of methyltestosterone a day when there is free bleeding and two a day when there is moderate bleeding, but none when there is slight flow. It is preferable to allow the tablets to melt in the mouth, for absorption into the circulatory system increases the efficacy of testosterone. In those unusual instances in which methyltestosterone fails to afford satisfactory control of the bleeding, one may give additional intramuscular injections of 25 mg. of testosterone every second day until the flow ceases.

Androgenic therapy is not a specific cure. However, it inhibits bleeding, month after month, usually until the menorrhagia-provoking mechanism has reverted to normal or, sometimes, until a pathologic cause of the bleeding becomes evident.

SUMMARY

1. The nature and causes of abnormal functional bleeding remain undetermined, although less problematic than heretofore.

2. Treatment of abnormal functional bleeding is largely symptomatic and empiric. Hormonal therapy is confused and in a state of flux but fairly satisfactory.

104 South Michigan Avenue.

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[1] Allen, W.: Paper read at the meeting of the Chicago Medical Society, Jan. 18, 1947.

BLEEDING ASSOCIATED WITH THE MENOPAUSE

J. P. PRATT, M.D.
Detroit

Rhythmic bleeding over a period of years is a habit that is accepted. Any variation of duration in rhythm or amount of bleeding causes anxiety to the patient and obligates the physician to find a satisfactory explanation. Cancer education has taught many more women to be aware of irregular bleeding and has induced them to seek professional advice, thereby increasing the opportunity for early diagnosis of cancer. While cancer is the most important cause of menopausal bleeding, many other conditions are to be considered.

The average age at the menopause is about 47, but it may appear years earlier or later. Since cyclic activity of the uterus depends on ovarian function, the menopause is really an expression of the state of the ovaries. The peak of ovarian activity is reached at about the age of 25. From that time there is a gradual decrease of ovarian function until a level is reached that is too low to induce menstrual flow. Hence, the premenopause might be said to begin at 25 years of age.

Normal cessation of menstruation at the menopause varies in different persons, and sudden cessation of flow is not the most commonly observed form. For a few months or years preceding the menopause there may be an increase in the amount or frequency of flow. In such instances the interval must be regular and not less than two weeks to be considered normal. To place a limit on the amount of flow that is normal is more difficult, but much will depend on the patient's previous record; e. g. heavy flow appearing in a woman who previously had scant flow should arouse suspicion. A gradual decrease in the amount or frequency of flow is usually not a cause for concern.

Uterine bleeding may be a symptom of anatomic lesions, or it may occur without any structural change being demonstrable. Physiologic disorders may appear without any evident structural basis, or bleeding may be associated with but not dependent on anatomic lesions. Interpretation of the cause of bleeding, therefore, requires a careful search for a lesion which might explain the symptom. If no lesion is found, disturbance of function is assumed; then a thorough survey of the patient for systemic disease and glandular disorders is indicated.

When a problem of uterine bleeding is presented, many conditions may enter into the differential diagnosis. Some of these may now be briefly mentioned:

1. Hyperplasia of the endometrium may occur at any time during the reproductive period, at the menopause or even long after the menstrual flow has ceased. At any period of life the mechanism is the same—an abnormally persistent and relatively excessive estrogenic influence, producing growth of the endometrium. Bleeding of the hyperplastic endometrium may be explained by the same process of vascular changes as that which occurs in menstruation, but the growth of endometrium and the amount of bleeding are not proportional to the excess of estrogen. Diagnosis is made by history and curettage. Ribbons of tissue as well as the amount of tissue removed by a curet are suggestive. Microscopic examination is usually conclusive, but in some instances it is exceedingly difficult to distinguish between benign adenoma, adenocarcinoma and hyperplasia. In some instances the diagnostic curettage alone is adequate treatment. If the bleeding persists, the relative merits of irradiation (to reduce ovarian function) or hysterectomy are to be considered. Hormonal therapy may be tried, but since any type of endometrium may bleed and since the amount of bleeding is not proportional to the excess of estrogen, choice of the hormone to be used remains problematic.

2. Cervical polyps are frequent in women after the age of 40. These growths may be present for a long time without symptoms. Bleeding, the chief symptom, may be an increase of the menstrual flow or slight spotting between the periods. Postcoital staining may be noted, and occasionally a severe hemorrhage occurs. Although polyps are usually benign, diagnosis of them is important, for the symptoms may simulate those of cancer. Most polyps can be seen and felt, for their presence causes dilatation of the external os. Unusual patency of the os should arouse suspicion that a cervical polyp exists. Growth of a hidden polyp may frequently be stimulated by estrogenic therapy, thus facilitating its detection. The majority of cervical polyps are pedunculated and can be diagnosed macroscopically. Sessile polyps require microscopic analysis. Treatment of cervical polyps is excision, and when they are pedunculated it is a temptation to remove them at the time of the examination in the office. However, it is better to curet the uterus and cervical canal, for other lesions may be present.

3. Endometrial polyps present similar problems of bleeding. Diagnosis may be suggested by the symptoms, but final proof rests on their removal.

4. Adenomyosis of the uterus in women past the age of 40 is a cause of hemorrhage which is often extensive. Treatment is either reduction of ovarian function or hysterectomy. If artificial menopause has been established, the use of estrogens for menopausal symptoms is contraindicated because the bleeding might recur.

5. Fibromyomas of the uterus, particularly in the submucous location, tend to produce a more profuse and prolonged flow and to shorten the intermenstrual interval. When the tumors protrude into the uterine cavity and become polypoid, necrosis with infection may occur with symptoms of intermenstrual bleeding and foul discharge, thus simulating cancer.

6. Functioning tumors of the ovary occur from childhood to old age, but the majority are found after middle life. In the postmenopausal patient the estrogen-producing function of the feminizing tumors stimulates the uterus, producing renewed growth of the myometrium and endometrium. Atypical bleeding occurs, which may be cyclic or regular, scanty or profuse. The presence of an ovarian tumor with renewed bleeding is significant.

7. Vascular changes are accepted as normal for the menopause. As the ovarian function diminishes, the blood vessels of the uterus shrink and show varying degrees of arteriosclerosis. Occasionally a sclerotic vessel ruptures, giving rise to more or less serious hemorrhage. I recall 1 such instance in which the

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From the Division of Gynecology and Obstetrics, Henry Ford Hospital.

Read in a panel discussion on "Gynecologic Bleeding" before the Section on Obstetrics and Gynecology at the Ninety-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., June 11, 1947.

patient bled profusely, requiring transfusion before she could be moved from her home to the hospital for hysterectomy. Examination of the uterus revealed a single rupture in a sclerotic artery. Her vascular system did not manifest generalized arteriosclerosis.

8. Inflammations of the ovary or uterus are associated with menorrhagias during the earlier years of the reproductive period. The same conditions may persist up to the menopause but cannot be considered characteristic of this period in life. There are certain inflammatory lesions, however, associated with involution; e. g., senile vaginitis. As the estrogenic stimulation diminishes, the vaginal mucosa is reduced in thickness and the blood vessels come to lie close to the surface, giving a characteristic reddish appearance. The smooth surface is easily abraded and often becomes infected. Opposing surfaces may heal together even to the point of obliteration of the upper part of the vagina. The discharge from infected areas and from breaking adhesions is often blood-tinged. Occasionally the bleeding may be profuse.

9. During the process of involution the mucosa may contract about the external urinary meatus with eversion of the urethral mucosa. This delicate tissue is susceptible to injury and may also become infected. Blood stains may be noted either from injury or from infection.

10. Prolapse of the cervix exposes it to injury which may lead to abrasion or even ulceration. The cause of bleeding is obvious on inspection.

11. Stenosis of the cervix is a part of the genital atrophy of involution. As the occlusion of the cervix progresses, secretions of the endometrium may be retained. Bacteria invade the cavity through the partly occluded cervix, and endometritis may result with retention of pus—pyometra. Sometimes the pressure within the uterus reaches a point at which the purulent content is expelled; at other times the occlusion of the cervical canal may be complete, and the infectious process may be isolated in the uterus. It is believed that seepage of the irritating material from the uterus may be a cause of senile vaginitis. The alternate retention and drainage of the uterus has been known to go on for years.

12. Therapeutic bleeding is an innovation of recent years, and it is gaining in significance. Since the discovery of potent estrogens and synthetic preparations with estrogenic activity, estrogenic therapy has expanded tremendously. Even the injection of natural estrogens is no longer exclusively an office practice, for patients have been taught to treat themselves. For the most part, however, hypodermic injections remain in the hands of physicians or office nurses. With the introduction of synthetic preparations, diethylstilbestrol and related compounds, self medication is increasing rapidly, especially since the material can be purchased over the counter without prescription. Cyclic bleeding can be demonstrated in women long past the menopause by the administration of estrogens. Bleeding can be controlled and timed by planning the dose and time of administration. In many instances bleeding occurs when medication is continued at the same level without interruption. Formerly, one expected to find an organic lesion in nearly every instance of bleeding after the menopause. This is by no means true today. Analysis of the cause of premenopausal bleeding is far more difficult than it was before the use of estrogens. It has become necessary in every investigation of menopausal bleeding to determine, if possible, whether the patient has been using estrogens. Correct information regarding the material used or the dosage is often difficult to obtain. In many instances the chief gynecologic complaint is therapeutic bleeding. Emotional disturbance may be important on account of fear of cancer. Judicious use of estrogens is desirable, but thoughtful consideration should be given to the indication for prescribing them and self medication should be discouraged.

13. Carcinoma ranks first in importance among all the causes of menopausal bleeding. It is a murderous disease with an insidious onset. Hope of improving the cure rests on earlier detection of the lesion. Since almost every carcinoma of the uterus, tubes or vagina bleeds, and in many instances bleeding is an early symptom, it is axiomatic that correct interpretation of every instance of menopausal bleeding would expose the brutal invader.

Bleeding appears relatively earlier in cancer of the fundus than in that of the cervix. Nearly every cancer of the fundus bleeds early. The diagnosis may be confused by the presence of fibroids, and because the fibroids are easily felt the possibility of coexisting carcinoma may be overlooked. If irradiation is contemplated for a fibroid tumor, the possibility of cancer should be borne in mind and a thorough curettage of the uterine cavity should be performed. Even then it is possible to miss a malignant growth. Cytologic study of exfoliated cancer cells found in vaginal smears is a valuable contribution to early diagnosis. Desquamation of epithelial cells from a malignant growth is greater than from normal epithelium. Its designation as a prebiopsy method of detection is well justified.

Cancer of the cervix is treacherous because symptoms of the early stage are absent or negligible. The first symptom is leukorrhea, which is an increase of normal secretions due to hyperemia, differing from the normal only in quantity. The local blood vessels, changed by the new growth, become more permeable; plasma exudes, and the leukorrhea becomes watery. Unfortunately, this early symptom is seldom recognized. Later the small blood vessels are broken by the invasion of the growth, and traces of blood are noted particularly after coitus or following a douche. Cancer education has helped to make more women conscious of trivial bleeding. Cancer detection has disclosed many carcinomas of the cervix before appreciable symptoms appear.

14. Other miscellaneous causes of menopausal bleeding include systemic disease, endocrine disorders, particularly thyroid, nutritional disturbances, vitamin deficiencies and inorganic deficiencies, particularly calcium.

Cancer education has unquestionably made many women cancer conscious. Sometimes this is unfavorable, for it may cause profound emotional disturbances from an unfounded cancerphobia. Many women complain of bizarre symptoms that are not explained by physical observations. It has been my practice, when no objective signs are present, to remark casually, "At any rate, you know that you do not have cancer." Frequently, the patient then says, "Doctor, that is what I really wanted to know." A real opportunity for giving comfort would be missed if one did not recognize the possibility of the patient's repression and fear to ask.

Menopausal bleeding is an important subject with many ramifications. Some of the numerous causes of bleeding have been mentioned. In each instance careful consideration of the patient as a whole is demanded. An honest effort should be made to find the true cause. Women should be encouraged to seek an explanation of every bleeding, no matter how trivial. This field offers the physician a great opportunity for giving comfort and saving life.

PANEL DISCUSSION

Arthur H. Curtis, M.D., Chicago, Moderator

The Moderator: In Dr. Fluhmann's absence due to illness in his family I shall ask Dr. Emil Novak, of Baltimore, to answer questions for us.

HYPERESTRINISM

Question: Is equine gonadotropin used to induce ovulation in hyperestrinism?

Dr. Emil Nowak, Baltimore: Practically all of the methods of ovarian therapy used in the treatment of functional bleeding only scratch the surface. They are directed toward the ovarian manifestation of a disturbance which is surely primarily pituitary. Dr. Fluhmann and others have emphasized in this symposium that at the bottom of this disorder is a failure of ovulation, an incomplete ovulatory cycle. If we could give the pituitary principle, equine or not, which would invariably and precisely induce ovulation, we could cure most of these patients of this particular group that we are discussing. Unfortunately, we have in gonadotropin no principle of undoubted virtue. Some years ago an article was published by two excellent gynecologists in Chicago. The belief was expressed that by giving equine gonadotropic hormone it would be possible to induce ovulation in human beings. They are now quite willing to admit the incorrectness of this. No one has as yet devised any way of making a nonovulating woman ovulate. All our present day methods of treating functional bleeding are pretty much in the nature of makeshifts. They are stopgaps, but we have to use them in women with severe and perhaps intractable bleeding. It is not altogether physiologic, perhaps, to give large doses of estrogen for the cessation of bleeding, but it does the work in a great many cases. It probably is not entirely physiologic to give a woman with decompensation digitalis, but it does the work, and we have to treat these women as sick women. The same applies to the estrogenic hormone, concerning which I feel pretty much the same as Dr. Curtis. It is not as unphysiologic, perhaps, as it may seem, but even if it were, if it tides them over until the hoped-for readjustment takes place—as it does in almost all cases—there certainly can be no criticism, especially since we have no ideal method of treatment based on the physiologic disturbance which takes place in these cases.

UTERINE BLEEDING IN PATIENTS WITH HYPERTENSION

Question: Do you believe that uterine bleeding may occur in patients with essential or benign hypertension?

Dr. Novak: I think it may, although it would be explainable on the basis of coincidence. I had not expected to say anything about hypertension. I think that perhaps Dr. Curtis ought to answer that question. I also have seen cases of otherwise unexplainable bleeding in which women happened to have hypertension. I have not felt sure that the hypertension had anything to do with it. The older men will remember discussions of uterine apoplexy. If a woman can have the hemorrhage in the brain, theoretically she could have a little hemorrhage from the uterine blood vessels, but, after all, I think that these cases are not frequent in which uterine bleeding is associated with hypertension, and we cannot be sure. I have seen several cases in my long experience, but I do not know exactly what the hypertension has to do with it.

CANCER AND HYPERTENSION

The Moderator: Dr. Novak, it has been suggested by Dr. Mengert that we have a discussion among the group. I cannot help feeling that we must admit that, other things being absent, a patient who has hypertension should not have quite as certain a precurettage diagnosis of cancer as one who has not hypertension.

Dr. Novak: Many of these patients with hypertension—the majority, I think—do have some other much more common and readily recognized cause, senile endometriosis, or something of that sort. If they take the cases numerically, that would be far more likely to be the cause of bleeding where there is no apparent cause. It is a difficult thing to prove, and I am sure that Dr. Curtis will agree, because of the fact that hypertension in the menopause is common. We cannot always make the proper diagnosis. Dr. Reynolds, do you want to say something about the possible role of hypertension?

Dr. S. R. M. Reynolds, Baltimore: Dr. Curtis asked whether hypertension might not be a factor in uterine bleeding. Of course it could be. If the pressure is transmitted to the capillaries, capillary lakes and venous lakes that may form within the subepithelial portions of the uterus, it might contribute to the bleeding.

The Moderator: It is transmitted through to the brain and causes apoplexy.

Dr. Reynolds: Yes, of course. These are localized episodes. While I do not want to discuss hemodynamics, I might mention the fact that among the factors that govern the pressure transmitted to a terminal artery is the diameter of the branch with relation to the diameter of the stem and the angle of arterial branching. If these relationships assume abnormal proportions, one may have excessive pressure and transmission of fluid to a localized area. I did mention in my paper that hemodynamic factors concerning which we have no objective facts contribute to the menstrual process. Dr. Doris Phelps last week reported at the Association for the Study of Internal Secretions experiments in which she set up in a group of monkeys standard conditions with respect to dosage of estrogen for the purpose of inducing bleeding by deprivation of estrogen. She found that she got better consistency in her results when correlating the bleeding characteristics in any given course of injections with the previous history of bleeding and the length of time that had lapsed between the two periods, rather than the particular course of injections preceding the period of bleeding. There was therefore some controlling factor carried over from one period to the next influencing the bleeding response to a course of injections of hormone.

ROLE OF LYMPHATICS IN MENSTRUATION

Question: Please repeat what you said with regard to the role of lymphatics in menstruation.

Dr. Reynolds: The physiologic factors and morphologic characteristics of the blood vessels which I have reviewed suggest that there is something missing in our present concept of a mere vasoconstriction of endometrial coiled arterioles in the control of menstruation. We have a menstrual toxin, so called, and we have menstruation occurring in species that do not have endometrial coiled arterioles. I merely raise the possibility that there is some other common denominator for the various kinds of menstrual bleeding. It seems to me, as a working hypothesis, that menstruation may well be associated in some way with a deficient mechanism for removing transuded plasma proteins in the endometrium because of a deficient lymphatic capillary circulation. Let those of us on the experimental side take a new tack, adopt a fresh approach and see whether or not we can get some other basis on which to explain the many conflicting facts concerning menstruation from "any type of endometrium." I raise the question of lymphatics in the endometrium as a working hypothesis, rather than as a statement of fact.

BLEEDING FROM ENDOMETRIUM

Question: Bleeding from hyperplastic endometrium has been discussed. Does not functional bleeding also occur from other types of endometrium, such as atrophic?

Dr. Novak: To generalize, bleeding can occur from any kind of endometrium.

The Moderator: I think this query is interlocked with the one you have now, Doctor if you will permit me to interrupt for a moment. There have been extrogenous pigmentation studies made on functional bleeding where the endometrium does not show the typical, nonsecretory Swiss cheese pattern.

Dr. Novak: As I started to say, bleeding can occur from any kind of endometrium. Hyperplasia of the endometrium never causes uterine bleeding in itself. Hyperplasia of the endometrium is simply an expression of the growth effect of the estrogen. We have to think of the endometrium, as having two types of cycle: one, a growth cycle, and the other, the bleeding cycle. The two do not necessarily go together in parallel fashion. In many cases the bleeding spill, whatever the cause may be, may occur at a low growth level in the endometrium. In other cases, hyperplasia may be present, and be present for weeks and weeks, and the woman has no bleeding. A woman with amenorrhea of long standing may have hyperplasia, because in her case the growth level is kept up by a steady, persistent supply and there is no drop in the level to precipitate the attacks. The bleeding of the functional type, therefore, is due to an interlocking, shuttlecock sort of relation between the pituitary and the ovary. The cases of hyperplasia one finds characteristically in an ovulatory functional bleeding but, as one of these questions brings out, functional bleeding may be also of the ovulatory type. In other words, we can get a secretory endometrium in a woman who has bleeding of the functional type. These cases are much less common, and we know much less about the mechanism. We know, in fact, almost nothing. Whether it is due to imbalance between the estrogen and the progesterone, or due to some disturbance of the vascular or muscular mechanism, we can only theorize. But the simplest division to make of our functional cases is the nonovulatory group and the ovulatory group. The ovulatory group is much more common, although the nonovulatory cycle is less common than the ovulatory throughout the reproductive period of life. It is relatively common at those very periods when functional bleeding occurs—puberty and the premenopausal years. It is an aberration of the anovulatory type that causes many cases of functional bleeding.

EFFECTS OF REMOVAL OF NORMAL UTERUS ON PERSONALITY

Question: Discuss the effects of promiscuous removal of comparatively normal uterus on the personality of these persons.

Dr J. P. Pratt, Detroit: As the menopause approaches, it is possible to be more lax in our indications for removal of the uterus, but that does not mean giving carte blanche to remove the uterus on sight. As Dr. Norman Miller recently reviewed the results of removal of the uteri in various hospitals in three different states, he found that something like 50 per cent were removed without demonstration of pathologic lesions after they were removed. That is to be decried; there should be a good reason for removing the uterus. This question implies a psychosomatic angle which is most important. If the uterus is to be removed at any time, it should be discussed thoroughly with the woman, and she should understand in advance what it means. She should not be scared by suddenly being told after operation that her uterus has been removed.

The Moderator: I am afraid I gave an erroneous impression of the therapy of radiation treatment for bleeding. We give a routine amount of radium for bleeding at or near the menopause. We resort to the massive dosage of radium only in those patients who have severe and persistent, intractable flushes; so it is a subsequent administration of radium in selected cases. It would be wrong to give a large dose of radium to every bleeding patient for whom one wished merely to stop menstruation. I wanted to call attention to the fact that if a woman after irradiation has marked flushes, one may be able to relieve those flushes through giving her more radium, such as one would give a patient with cancer.

MENOPAUSAL BLEEDING AND MALIGNANT GROWTHS

Question: What percentage of menopausal bleeding turns out to be malignant?

Dr. Pratt: That would be difficult to fix, because in some regions there is a great deal more therapeutic use of estrogen than in others, and induced functional bleeding is far more common in one community than in another. Even so, the relatively smaller percentage of menopausal bleeding (by "menopausal" I mean at the time of the menopause) would be due to malignant growths. After the menopause, there is a much higher percentage, as much as 50 to 60 per cent.

The Moderator: I am in accord with what Dr. Pratt has said, and I am sure that Dr. Novak is, that we must gage the amount of radium according to the patient.

LATE MENARCHE

Question: A single woman 18 years old has menstruated only once, the duration of which was ten days with no clots. This menstruation was five months ago. Her mother did not menstruate until her eighteenth year and has 4 living children. Please discuss this.

Dr. Reynolds: From the physiologic standpoint there is not much to say. This is probably a case of late menarche. It is entirely possible to have cyclic ovarian activity and not necessarily have menstruation occur. I recall the experiments of Dr. Markee, who observed the endometrial transplant in the eye of a monkey and found that there was a definite relationship between the growth cycle of the endometrium and bleeding in the transplant. Bleeding occurred only when regression or thinning of the endometrium was sufficiently rapid and adequate in amount. So one has to suppose that the menstrual mechanism, as part of the endocrine cycle, is dependent on the rate of withdrawal and so on the rate of thinning as well as the absolute amount of regression of the endometrium. In such a case as this, I think it is entirely possible, though we cannot be certain, that the ovarian hormone withdrawal phase in these persons is much less abrupt, and so the regression is less abrupt. Consequently bleeding does not take place.

CERVICAL METAPLASIA AND CARCINOMA

Question: Does cervical metaplasia produce the same individual cellular morphologic change that carcinoma in situ does?

Dr. Novak: I will say no.

USE OF RADIUM

Question: What is the real objection to using radium in a young woman that curettage has failed to relieve, say 400 to 600 mg.?

The Moderator: Thirty-five years ago I did a long piece of work on the pathology of the cervix. Incidentally, I mentioned the use of radium in checking discharges. Nobody paid any attention to the vital work on pathology, but they all took up with the use of small doses of radium intracervically. In doing intracervical work with a small dose of radium, such as 350, 400 or 600 millicuries, I had opportunity to note the effects on the other pelvic viscera. The use of a small dose of radium is a good deal like putting a too hot sun on Iowa corn: you get radium-sick ovaries. I beg you not to do it.

MENSTRUATION THROUGHOUT PREGNANCY

Question: Some women claim to menstruate regularly throughout a normal pregnancy. What is the nature of such bleeding?

Dr. Novak: Bleeding of that type is usually due to an adventitious factor and is not genuine menstruation. It is often due to such conditions as an eroded cervix, or a cervical polyp which bleeds at irregular intervals. In other words, the bleeding is not as periodic as perhaps the woman herself assumes. Bleeding of an apparently normal menstrual type for one period is relatively common, but it is not genuine menstruation. It is the so-called implantation bleeding which occurs when the egg burrows into the endometrium, which erodes the blood vessels which fill up the little spaces. The blood often breaks through into the uterine glands and makes its way to the surface and externally. Bleeding of this sort is usually less abundant than it is with the normal menstruation. The women who menstruate one month, for example, after they are pregnant, will generally tell you that it is not as free as usual. Even if the bleeding is not present in macroscopic form, it is often present in microscopic form. It would probably be found to be present in a large proportion of cases. One such study has been made and bears out that impression. Whether genuine menstruation can occur is not quite so certain, but it probably can. It can on the basis of a few isolated observations. One German investigator many years ago had an opportunity to operate on pregnant woman, and by the demonstration of corpora lutei of different ages, he concluded that the periodic bleeding was of a genuine menstrual character.

VICARIOUS MENSTRUATION

The Moderator: Do you believe in vicarious menstruation?

Dr. Novak: Yes, I have seen instances—I am sure most of you have—of vicarious menstruation from the nose or from the lungs. We have not sufficient time to discuss it in detail, but I can illustrate. I had a pseudoform hermaphrodite who bled from her nose at about monthly periods, bleeding from various other cavities, and she also had large subcutaneous ecchymoses on her leg, which I could see. She did not have any vagina. She did not bleed externally. The question of the mechanism of these cases is interesting, and the question of distinction of types is interesting. Even if a woman has tuberculosis and has hemoptysis, if it comes only at the time of menstruation I think that it is vicarious menstruation. In case of such lesions in the nose, we have known for many years that there are two little areas in the nose—so-called genital tubercles—which respond to estrogen. It is not necessary to assume the presence of endometrial tissues, because on the basis of animal experimentation such as that done by such excellent investigators as Sutterman, it has been found that estrogen produces a tremendous engorgement of these so-called genital areas. At the time of menstruation it has been shown that there is an increased fragility of the blood vessels throughout the body. There was a study made some years ago on this subject. And so there is every reason to feel that the phenomenon of vicarious menstruation is a genuine one, although of course many menstruations which are not genuinely vicarious in character, in the sense of occurring at regular intervals, are sometimes loosely included under that designation.

The Moderator: In confirmation of what Dr. Novak said, there is no question in my mind, from personal experience and the experience of others, that the taking of large doses of estrogens tends to increase the genital areas of the nose and thus helps to make blockage of the nasal spaces. We must beware of estrogenic medication in large amounts over a long period of time in persons with high blood pressure.

"DYSFUNCTIONAL BLEEDING"

Question: From the standpoint of correct terminology, should not the term "dysfunctional bleeding" be used for "abnormal uterine bleeding?"

The Moderator: "Functional bleeding" is the accepted term and, to me, is less confusing than "dysfunctional bleeding."

VAGINAL OR ABDOMINAL HYSTERECTOMY

Question: Which method of hysterectomy—vaginal or abdominal?

Dr. Pratt: I think that depends primarily on the operator's ability to do one better than the other. There are also definite indications for choice, such as relaxation of the vagina, making the vaginal approach easy or difficult.

TESTOSTERONE FOR FUNCTIONAL MENORRHAGIA

Question: Do you give testosterone for ten days preceding the period in cases of functional menorrhagia?

The Moderator: I give methyl testosterone, three tablets daily, with great bleeding, and only during the bleeding. I give two tablets daily when there is moderate bleeding and none when there is slight bleeding.

EFFECT OF ESTROGEN THERAPY

Question: What is the effect of estrogen therapy on the ovaries of young girls?

Dr. Novak: Moderate doses could cause no effect. If the dosage is excessive, ovarian function is inhibited. It is possible to convert the ovaries of an animal or a woman into functionless organs by sufficiently large doses of estrogen, but the ovary always has a tendency to bounce back, and sooner or later it will reestablish its function.

EFFECT OF ROENTGEN RAYS ON OVUM

Question: Do you believe that the mutations in the fruit fly should influence the use of the only mechanism, roentgen rays, which actually induces ovulation?

Dr. Novak: The question obviously has bearing on the controversial question as to the employment of roentgen rays in various menstrual disorders. This obviously refers particularly to the opposite condition of what we are discussing, amenorrhea and sterility. The chief work along the line of genetics has been done in animals like mice and rats. I do not know whether any of you were present at a discussion of this subject which was held at a previous Atlantic City session of this Section, and the question of roentgen treatment was under consideration. Many of us are rather concerned about it. Others, as you know, are very enthusiastic. It is true that the men who use x-ray stimulation can apparently report fairly good results, probably better than many of us can report from hormone and other therapy, and yet I think that the conservative gynecologist is a little hesitant—I know that I am—about the use of roentgen rays. We feel this conservatism chiefly on the basis of what the geneticists tell us. Dr. Little said he had not for obvious reasons been able to make experiments, but that he knew in the case of lower animals, mice or rats, that roentgen therapy of this sort would have a serious effect not on the immediate offspring but on the offspring of subsequent generations. I do not know whether that is applicable to the human being or not. I think that Dr. Little himself did not pretend to know, but such considerations must make us hesitate somewhat.

STAIN USED FOR VAGINAL SMEAR

Question: What stain is used for vaginal or cervical smear?

The Moderator: Dr. Papanicolaou changes his stain a little, rather frequently. I say that without criticism. He is a wonderful man.

DEFICIENCY IN COAGULATING CONSTITUENTS OF BLOOD

Question: Does a deficiency in the coagulating constituents of the blood cause abnormal uterine bleeding?

The Moderator: All systemic derangements are factors in causing bleeding. We have purposely ruled out all those which the internists should attend to.

ENDOMETRIOSIS AND ENDOMYOSIS

Question: Kindly differentiate between endometriosis and endomyosis, and their role in functional bleeding.

Dr. Novak: "Endomyosis" is a term with which I am not familiar. Endometriosis has no characteristic role. We will assume that the questioner means adenomyosis." Neither has an important effect in bleeding. Of course, either one can be associated with bleeding, but the bleeding in the large proportion of cases is due to an associated dysfunctional factor. Bleeding, in many cases, of the endometriosis is due to associated bleeding of the functional type. The same with endomyosis—not entirely, because we have other possible factors.

TESTOSTERONE AND ESTROGENS

Queston: Is testosterone going to supplant estrogens in menopause symptoms in the future?

The Moderator: We do not know. The problem is in a state of flux, still confused.

SENILE VAGINITIS

Question: What would your treatment be for senile vaginitis?

Dr. Pratt: I would treat local infections with mild antiseptics, and in the early stages, estrogenic therapy. After adhesions are formed, there is no treatment.

"LIQUID" VERSUS "SOLID" PENICILLIN IN OIL AND WAX

The Effect of Particle Size and Type of Penicillin

HARRY F. DOWLING, M.D.
MONROE J. ROMANSKY, M.D.
HENRY WELCH, Ph.D.
JAY A. ROBINSON, M.D.
VELMA L. CHANDLER, M.S.
WILLIAM W. ZELLER, M.D.
and
HAROLD L. HIRSH, M.D.
Washington, D.C.

The incorporation of penicillin in oil and beeswax has been found to be a satisfactory method of prolonging the absorption of penicillin. Romansky and Rittman,[1] the originators of the method, showed that after the injection of 300,000 units of amorphous calcium penicillin in oil and wax 70 per cent of the patients so treated had demonstrable blood concentrations of penicillin for twenty-four hours. Several modifications of the original preparation have now been made and utilized clinically.[2] Crystalline sodium and potassium as well as the amorphous calcium penicillin were found suitable for use in the mixture. Furthermore, certain preparations were devised which were fluid at room temperature and did not require heating before injection.

The liquid preparations of penicillin in oil and wax, which are fluid at room temperature (below 43.3 C. or 110 F.),[3] are now available commercially and are identical in composition with the original viscid (so called "solid") type. These preparations have been prepared by a change in their physical state only. Fluid preparations of penicillin in oil and wax are to be preferred over the more viscid ones because they are easier to administer. The viscid ("solid") preparations require heating before injection, are difficult to extract from the vials and, if administered in 1 cc. disposable syringes, are very expensive.

Because of its purity, crystalline penicillin is less likely to cause reactions than amorphous penicillin. In addition, it is more stable and can be kept at room temperature for longer periods of time than the amorphous preparations. Obviously the liquid preparations, utilizing crystalline penicillin, are preferable, if it can be demonstrated that they will produce as much prolongation of the blood penicillin concentrations as the amorphous and viscid preparations. Data furnished to the Food and Drug Administration by various manufacturers seemed to indicate that preparations of crystalline penicillin were superior to preparations of amorphous penicillin. On the other hand, there was considerable variation in the results obtained with products made by these manufacturers and, in fact, within the batches obtained from a single manufacturer. Only two reports [4] have been published concerning the ability of the liquid preparations to prolong the blood penicillin concentrations. These authors stated that when 300,000 or 600,000 units of penicillin in this form was injected intramuscularly, prolongation of its effect was not as great as had been obtained with some viscid preparations.

Because of the importance of determining which of the available preparations is the more suitable and because more data were needed to clarify these points, the present study was undertaken. A total of 252 patients in the wards of Gallinger Municipal Hospital were treated with various preparations of penicillin produced by eleven manufacturers. These preparations consisted of crystalline penicillin (sodium and potassium) and amorphous calcium penicillin in oil and wax, both in the "solid" and "liquid" forms. Each subject was given 300,000 units of penicillin in 4.8 per cent beeswax in oil contained in 1 cc. by a single intramuscular injection. Blood was collected at the twelfth, sixteenth, twentieth and twenty-fourth hour after injection. Each specimen was identified by a code number, and one half was submitted to the Antibiotic Section Laboratory, Walter Reed General Hospital, for penicillin assay by a modified Rammelkamp method.[5] The other half was sent to the Division of Penicillin Control and Immunology of the Food and Drug Administration for assay by the "subtilis" technic.[6] In the "subtilis" technic, a control was performed with each blood specimen to eliminate false readings due to the presence of an antisubtilis factor in human blood.[7]

Early in the investigation it became apparent that the size of the particles of penicillin used in preparing the liquid forms influenced considerably the prolongation of the blood penicillin concentrations. Accordingly, a method was devised for determining the relative weight of the penicillin particles. The details will be published elsewhere.[8] Preparations found by this method to contain 50 per cent or more of the total relative weight of particles measuring greater than 50 microns were classified as "large particle" preparations. Those with less than 50 per cent of the particle by relative weight in this range were classified as "small particle" preparations.

The percentage of patients showing measurable blood concentrations obtained at various intervals after injection of 300,000 units of penicillin in oil and wax in a single dose using "solid" and "liquid" preparations prepared with large or small particle amorphous or crystalline penicillin are given in the table. The percentage of subjects that showed measurable blood levels by both the Rammelkamp and "subtilis" methods are tabulated for all types of penicillin in oil and wax used. In nearly every instance penicillin was detected in a greater percentage of blood specimens by the "subtilis" technic than by the Rammelkamp method. It should be noted that the "subtilis" method is slightly more sensi-

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A cooperative study by members of the George Washington Medical Division, Gallinger Municipal Hospital; the Department of Medicine, George Washington University School of Medicine; Antibiotic Section Laboratory, Walter Reed General Hospital, and the Division of Penicillin Control and Immunology, Food and Drug Administration, Federal Security Agency.

[1] Romansky, M. J., and Rittman, G. E.: Penicillin Blood Levels for Twenty-Four Hours Following a Single Intramuscular Injection of Calcium Penicillin in Beeswax and Peanut Oil, New England J. Med. **129**: 940, 1945.

[2] Romansky, M. J.: The Current Status of Calcium Penicillin in Beeswax and Peanut Oil: Data from a Study of 600 Cases and Clinical Observations of 4,000 Patients Given 60,000 Injections, Am. J. Med. **1**: 395, 1946.

[3] If exposed to higher temperatures, these liquid preparations may solidify on cooling if not shaken.

[4] Romansky.[2] Hirsh, H. L.; Dowling, H. F.; Vivino, J. J., and Rotman-Kavka, G.: Penicillin in Beeswax and Peanut Oil: A New Preparation Which Is Fluid at Room Temperature; Absorption and Therapeutic Use, J. Lab. & Clin. Med. **32**: 34, 1947.

[5] Rammelkamp, C. H.: Method for Determining Concentration of Penicillin in Body Fluids and Exudates, Proc. Soc. Exper. Biol. & Med. **51**: 95, 1942.

[6] Randall, W. A.; Price, C. W., and Welch, H.: The Estimation of Penicillin in Body Fluids, Science **101**: 365, 1945.

[7] Chandler, V. L.; Price, C. W., and Randall, W. A.: Control and Evaluation of Blood Serum Assays for Penicillin, Science **102**: 355, 1945.

[8] Chandler, V. L.; Romansky, M. J.; Welch, H.; Dowling, H. F.; Robinson, J. A.; Zeller, W. W., and Hirsh, H. L.: A Method for Determining the Size and Relative Weight of Penicillin Particles and Its Importance in Preparing Adequate Preparations of Liquid Penicillin in Oil and Wax, to [illegible] ished.

tive than the Rammelkamp technic, since the Bacillus subtilis can measure a minimum of 0.03 unit of penicillin per cubic centimeter of serum, while the streptococcus used in the Rammelkamp method can measure approximately 0.039 to 0.078 unit per cubic centimeter of serum.

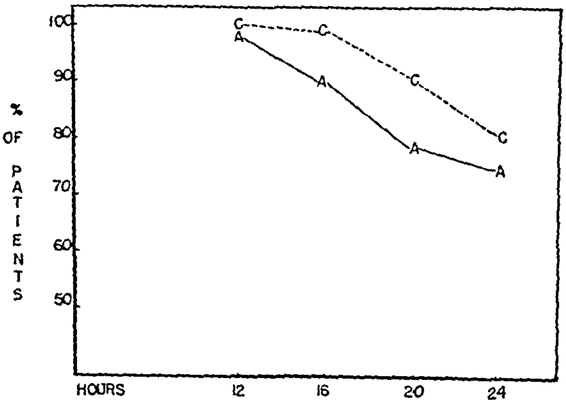

Chart 1.—Comparison of the percentage of patients with measurable blood concentration of penicillin following a singular muscular injection of 300,000 units of crystalline and amorphous penicillin in oil and wax ("subtilis" technic).

It will be seen from this table and chart 1 that when particle size and viscosity are not considered, the crystalline preparations are in general superior to the amorphous, when comparison is made on the basis of the number of subjects showing demonstrable concentrations of penicillin in the blood at various intervals after the original injection. Furthermore, each type of the crystalline mixtures was superior to the comparable type of amorphous.

From the table and chart 2 it is evident that the large particle preparations were apparently superior to those containing small particles when "solid" preparations were used, and definitely superior to small particle preparations when the "liquid" form was used. The best liquid preparation, that which contains crystalline penicillin in large particles, is as good as the best solid preparations, namely, those which contain crystalline penicillin, whether in large or small particles.

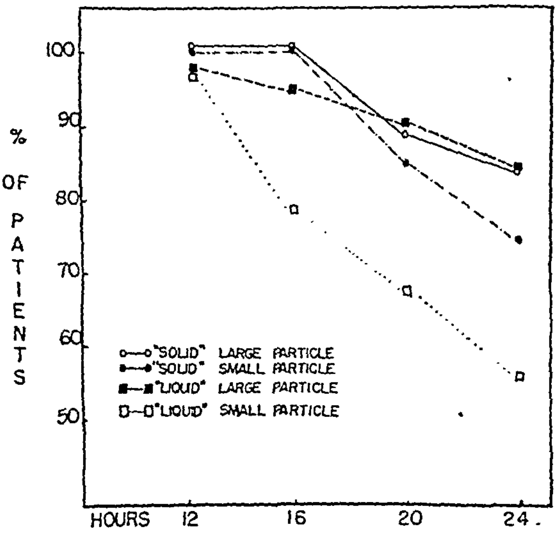

Chart 2.—Percentage of patients with measurable concentration of penicillin in the blood following the injection of 300,000 units of various types of penicillin in oil and wax.

COMMENT

The goal which the physician desires to achieve by the use of repository injections of penicillin is the maintenance of a therapeutic concentration of the antibiotic in the blood for the longest possible time. Since many preparations of penicillin in oil and wax lengthen the period during which therapeutic concentrations are present in the blood, it is desirable to determine which ones will do this best. Our investigations demonstrate that preparations made with crystalline penicillin are superior to those made with the amorphous material, provided that the particle size and the viscosity of these preparations are comparable. Furthermore, liquid preparations are as good as the viscid ("solid") preparations if 50 per cent or more of the total relative weight of the particles consists of measurable particles greater than 50 microns. Liquid preparations containing penicillin of smaller average particle size than this, whether amorphous or crystalline, are definitely inferior to the solid preparations. Since the liquid preparations are easier to administer, it is obvious that they will be the preparations of choice.

Percentage of Patients with Measurable Blood Concentrations Following a Single Intramuscular Injection of 300,000 Units of Penicillin in Oil and Wax

		Blood Levels of Penicillin							
		12 Hours		16 Hours		20 Hours		24 Hours	
Type of Penicillin in Oil and Wax	No. of Patients	Subtilis	Rammelkamp	Subtilis	Rammelkamp	Subtilis	Rammelkamp	Subtilis	Rammelkamp
"Solid"									
Large particle:									
Amorphous........	20	100	90	100	73	90	65	80	47
Crystalline........	20	100	90	100	88	88	84	90	70
Small particle:									
Amorphous........	48*	100	98	100	90	83	63	71	50
Crystalline........	19	100	100	100	94	94	90	90	66
"Liquid"									
Large particle:									
Amorphous........	34	97	86	94	67	85	54	82	34
Crystalline........	37†	100	97	100	97	100	97	92	89
Small particle:									
Amorphous........	50*	96	71	75	56	65	30	41	14
Crystalline........	24	100	96	91	82	83	81	56	43

* Of the 48 and 50 patients in these two groups, the bloods of 6 and 5 patients, respectively, were not assayed by the Rammelkamp technic.

† Of the 37 patients in this group, the bloods of only 11 were assayed by the "subtilis" method.

It should be emphasized, however, that the precautions observed for the "solid" preparations, namely, those concerning the use of dry needles and syringes and deep intramuscular injections, should be followed when the fluid preparations are employed. In addition, the fluid preparations must be shaken vigorously before use.

Preparations containing crystalline penicillin, which is more highly purified, can be stored at room temperature for eighteen months as compared with only twelve months for the amorphous material. In addition, they give therapeutically significant blood concentrations for longer periods than the preparations containing amorphous penicillin. For these reasons crystalline will be preferred to amorphous preparations.

SUMMARY AND CONCLUSIONS

Various preparations of penicillin in oil and wax, crystalline and amorphous, "solid" (viscous) and "liquid," those with large particles and those with smaller particles of penicillin, have been studied by giving a single intramuscular injection containing

300,000 units to patients and then determining the concentrations of penicillin in the blood at twelve, sixteen, twenty and twenty-four hours after the injection.

Preparations of crystalline penicillin in oil and wax were superior to preparations which were comparable in other respects but which contained amorphous penicillin. Solid preparations gave optimal results, if crystalline penicillin was used, whether the particles were of large or small size; or, if amorphous penicillin was used, when the particles were of large size. Liquid preparations gave optimal results if crystalline penicillin of large particle size was used and almost as good results with amorphous penicillin of large particle size. Liquid preparations containing penicillin of small particle size, whether amorphous or crystalline, gave definitely inferior results.

On the basis of ease of administration as well as on the concentrations of penicillin achieved in the blood, the liquid preparations of crystalline penicillin of large particle size are recommended as the most satisfactory form of penicillin in oil and wax.

Special Article

MULTIPLE SCLEROSIS

Diagnosis and Treatment

NATIONAL MULTIPLE SCLEROSIS SOCIETY
New York

MINIMUM STANDARDS OF DIAGNOSIS

The essential criteria of diagnosis of multiple sclerosis are evidences of lesions affecting white matter chiefly, scattered in time and space (that is, repetitive attacks which often give the disease a recurrent regressive and progressive character). Ordinarily, the diagnosis cannot be made unless there is evidence of more than one lesion or unless there are confirmatory findings in the spinal fluid, but characteristic symptoms such as retrobulbar neuritis with central scotoma, symptoms of acute transverse myelitis, diplopia or blurred vision or weakness or numbness of one extremity, if transient, create a presumption for the diagnosis. This presumption is strengthened if one or more of the common physical findings is present, such as palsy of one of the oculomotor nerves, nystagmus, slight ataxia of the arms, absent abdominal reflexes or Babinski or Oppenheim signs.

In addition to the foregoing manifestations the following are frequently found: difficulty in speech, monoparesis or hemiparesis, spastic paraplegia, spastic-ataxic gait, vertigo, intention tremor, frequency and urgency of urination, impotence, constipation, girdle sensations and other paresthesias, loss of vibration and position sense and general weakness.

Some type of alteration in the spinal fluid is found in about 70 per cent of cases. These include a moderate increase of cells (10 to 100), increase of total protein and alterations in the gold-sol curve (which should always be performed in suspected cases).

Uncommon manifestations are papilledema, psychoses, trigeminal and other types of neuralgia, facial palsy, headache, aphasia, hemianopia and convulsions.

Multiple sclerosis usually begins between the ages of 20 and 40 but is not excluded by an onset before or after these limits. The symptoms are often precipitated by infection, by emotional tension or pronounced fatigue and sometimes by pregnancy, and if so, the diagnosis is rendered more probable.

A steadily progressing disability or one limited to the lower extremities calls for caution in diagnosis. In doubtful cases neurosyphilis, neoplasm, subacute combined sclerosis and hereditary ataxia must be considered.

When the sensory symptoms are decidedly pronounced, hysteria is occasionally mistakenly diagnosed.

The accompanying table, modified from Sachs and Friedman, is often of value:

Symptoms and Signs Enumerated in the Order of the Frequency of Their Occurrence

Total number of cases studied 141 (male cases 77, female 64)

		Cases	Per Cent
1	Abdominal wall reflexes decidedly diminished or absent	118	83.7
2	Chief complaint weakness and stiffness of one or both lower extremities	115	81.7
3	Nystagmus (chiefly horizontal)	99	70.0
	Horizontal and vertical	17	12.0
	Horizontal and rotary	3	2.0
4	Babinski's sign present bilaterally	94	67.0
	Unilaterally	16	11.3
5	Tremor present in extremities alone	78	55.3
	Tremor of the head also	31	22.0
6	Ataxia and adiadokokinesis	66	47.0
7	Deep reflexes in the lower extremities increased	126	90.0
	Ankle clonus	61	43.0
	Patellar clonus	29	20.5
	In 3 instances the knee jerks were diminished (tabetic type)		
8	History of one or more remissions	59	42.0
9	*Bladder symptoms*	57	40.0
	Urgency	18	12.6
	Delay in starting urinary stream alone or in combination with urgency in 23 cases and incontinence in 21 cases		
10	Speech hesitant or otherwise disturbed	51	36.0
11	Gait spastic	43	30.0
	Spastic ataxic	46	32.6
	Ataxic alone	15	10.6
12	Evidence of facial weakness (other cranial nerves very much less involved)	46	32.6
	Tongue deviated to the right	14	10.0
	Difficulty in swallowing	5	3.5
	Uvula drawn to one side	4	2.8
	Cochlear nerve involved	3	2.0
	Vestibular nerve showed no response to stimulation	2	1.4
	Ocular muscles:		
	Internal rectus involved	6	4.3
	Ptosis	2	1.4
	External rectus involved	3	2.8
13	Temporal atrophy	46	32.6
	Blurring of the disks or mild optic neuritis	11	7.8
	Vision impaired without objective disk findings	25	17.7
14	Pain, numbness and tingling	43	30.0
	Objective disturbances in posterior column sensation	24	17.0
	Mild changes in pain, temperature and touch perception (including cases with hyperalgesic zones)	23	16.3
	Astereognosis	5	3.5
15	*History of diplopia*	31	29.0
16	Cremasteric reflexes diminished (males)	17	22.0
17	Mental changes (largely those of mental infantilism and signs of neurosis or neurasthenia; 1 patient was in a state hospital with the diagnosis of dementia precox; 1 patient showed the picture of Korsakoff's psychosis)	22	15.8
18	Emotional instability with explosive laughter	24	17.0
	Defects of memory	7	5.0
19	Spinal tenderness (chiefly middorsal)	17	12.0
20	History of trauma	14	10.0
21	Pupillary disturbances rare:		
	Pupils irregular	6	4.3
	Slightly sluggish to light	12	8.5
	Anisocoria	16	11.3
22	History of pronounced dizziness	12	8.5
23	Disturbances of potency	6	4.3
	(No disturbances in rectal control in any cases)		

TREATMENT

There is no agreement among neurologists in regard to the cause of multiple sclerosis; hence, no specific treatment directed at its cause is generally accepted. Many purely empiric treatments have been described. Since none of them have been shown by adequate statistical method to influence the course of the disease, they

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Prepared by qualified member neurologists and approved by the Medical Advisory Board of the National Multiple Sclerosis Society, an association for advancement of research on multiple sclerosis, Academy of Medicine Building, Fifth Avenue and 103d Street.

will not be detailed here. An account of them may be found in Brickner's article (*Bull. Neurol. Inst.*, New York. 4: 655, 1936), and an analysis of the results in an article by Putnam (THE JOURNAL, June 17, 1939, p. 2488).

There are certain natural limitations to all forms of treatment in multiple sclerosis. Recent pathologic studies have made it clear that a large proportion of axis-cylinders are often destroyed in the acute phase of the disease process; as the acute phase passes by, a certain tendency to recovery can usually be observed. The larger the lesion and the longer the disease has continued, the more severe the damage to axons. Any useful regeneration of axis-cylinders in the central nervous system is at present inconceivable. Possibly the formation or growth of lesions might be prevented by avoiding precipitating factors or counteracting the disease process; possibly mildly damaged nerve elements might be restored by some alteration in nutrition or circulation, and certainly some long-standing symptoms may be alleviated, for example, by relaxation exercises and retraining, which obviously have no beneficial effect on the disease itself. Whatever course of treatment is chosen in a given case, the physician should always bear in mind its rationale and should not expect more of it than it can conceivably accomplish.

I. MORALE BUILDING

Inasmuch as there is no satisfactory specific treatment for multiple sclerosis the physician must approach the problem somewhat obliquely. These patients are in a situation which they consider threatening and have a strong need for someone on whom they can be dependent. This constitutes a large part of the treatment responsibility. The physician can best serve the patient as a wise counselor who helps to relieve anxiety, to work out ways of overcoming physical handicaps and to develop positive interests which make the situation more tolerable. Since new symptoms often appear in a setting of anxiety and tension, a relief of these anxieties may help to prevent further progress of this disease. This approach to the problem may be called morale building.

Morale building should be constantly in the mind of the physician, because the most insignificant attitude displayed to the patient may be of profound importance in either a positive or a negative direction. The physician should first define his own attitude toward the disease. If possible he should assume a mature perspective which is realistic but takes into account plastic features as well as those which are unmodifiable. The physician who has responsibility for therapy is confronted by a double problem of treating the disease itself and treating the patient, or, more precisely, treating the problem which the disease represents to the patient. The problem is to aid the patient to deal with the disease in an effective manner. The most helpful attitude is to consider that this disease, as any serious life problem, presents a challenge which the patient needs to meet effectively. Though the disease is a serious liability, which need not and cannot be minimized, there is available to the patient the satisfaction of coping with and "overcoming" the liability.

Before informing a patient concerning specific features of the disease and factors which are likely to bring on new symptoms, it is wise to estimate the patient's capacity for dealing effectively with anxiety. Otherwise new fears may be introduced which will only aggravate the situation. After a good patient-physician relationship has been established palliative drugs may have beneficial value out of all proportion to the value of the drug itself. This good relationship is easy to establish, for the patient is seeking frantically for some understanding person who is willing to listen to his problem. The function of the physician is to listen in an understanding way and to give a minimum of directive advice. The physician should rather assist the patient to arrive at his own conclusions. By sympathetic listening the physician helps the patient bring into sharper focus his own plans for dealing with the illness in a constructive way.

The forms of treatment at present in use may be divided into: (1) those aimed at recognized precipitating factors (including climatic treatment); (2) those founded on current theories of the etiologic basis of the disease, and (3) those aimed at alleviating individual symptoms.

II. AVOIDANCE OF PRECIPITATING FACTORS

The usual list of circumstances which may precipitate attacks is as follows: infections, unfavorable climate, pregnancy, fatigue, poor nutrition, emotional disturbances and chilling.

Infections.—The effect of acute infections, such as the common respiratory infections, boils and paronychias, is often striking. In every case a search for foci of infection, such as sinusitis, tonsillitis, infected teeth and prostatitis, should be instituted and the focus dealt with if possible. Avoidance of infections is desirable but difficult to attain. Probably the influence of climate lies chiefly in its influence on incidence of infections.

Climate.—Multiple sclerosis appears to be a disease of cold, damp climates. It is commonest in northern Great Britain, the Baltic countries and certain areas of the United States (the northern Atlantic coast, the Great Lakes states and the northern plains). It is apparently relatively infrequent in the Mediterranean countries and in the Southern and Southwestern states. It seems to be almost unknown in China and Japan. Patients afflicted with multiple sclerosis often complain that in cold or damp weather their symptoms are more pronounced. Patients who move from an unfavorable climate to a mild, dry one such as exists in the Southwestern area of the United States (Arizona, Northern Texas, New Mexico, Colorado, Southern California) are often relatively free from acute relapses and may go into a remission. Further statistical studies on this point are being made by the Society.

Pregnancy.—The onset of multiple sclerosis, or relapses, are precipitated in about 40 per cent of female patients who become pregnant. Measures to be taken are obvious.

Fatigue, Poor Nutrition, Emotional Disturbances, Chilling.—Relapses sometimes seem to be precipitated in persons suffering from multiple sclerosis by periods of overwork, long automobile rides and exposure to cold. Severe reducing diets, carbohydrate "sprees" and other dietary vagaries sometimes seem to have a disadvantageous effect. There is, however, no good evidence that any specific dietary factor—e. g., presence of vitamins—has a bearing on the disease. Indeed, it is rarest in some regions in which vitamin deficiencies are most frequently observed, but care should be taken that the patient has a better than average diet and the best possible living conditions. Emotional disturbances and emotional tension in particular are apt to precipitate attacks. Whatever can be done should be done to maintain as calm an emotional level as possible.

Injury.—The role of injury in the causation of multiple sclerosis is hard to assess, and avoidance of injury is difficult to attain. It should be considered, however, in planning the lives of patients. Sometimes even such trifling trauma as lumbar puncture or venipuncture may appear to precipitate attacks.

III. REHABILITATION AND SYMPTOMATIC TREATMENT

Physical Therapy.—Excellent results have apparently been obtained in a number of cases of chronic multiple sclerosis by muscular reeducation. However, rehabilitation in chronic multiple sclerosis is difficult and may be impossible in the severely involved patient who has been confined to bed or a wheelchair for a number of years. The approach to therapy has been to attempt to restore function by development of substitute motor pathways in the central nervous system. Treatment at one institute devoted to physical therapy consists of daily administration of neostigmine in large dosage and daily intensive muscle reeducation with specialized carefully prescribed resistance exercises.

The following recommendations are made as the result of the experience obtained in the Department of Rehabilitation and Physical Medicine, Bellevue Hospital, New York:

> The methods which have been found useful in disabilities which limit motions at the joints, weakness, spasticity, rigidity and incoordination of muscles are the physical modalities heat, water, massage and therapeutic exercise. Therefore the use of physical and occupational therapy and rehabilitation procedures is useful in the symptomatic treatment of multiple sclerosis.
>
> Before planning a program for patients with multiple sclerosis it is essential that a physical therapeutist evaluate joint motion and muscle strength and function.
>
> 1. *Joint Motion.*—Every joint has a specific number of movements and range of motion. The therapeutist should test each joint to discover if there are any limitations of motion and the extent of the limitation.
>
> 2. *Muscle Test.*—The therapeutist should also give a muscle test, as is done in poliomyelitis, in order to discover the muscle groups which are paralyzed, weak, spastic or rigid. Muscle tests repeated over a period of months will give valuable information on the progress of the disease or results of the treatment.
>
> 3. *Functional Activities Test.*—The functional activities test consists of activities essential for daily living. A detailed classification of activities essential for daily living which is in use in the Department of Rehabilitation and Physical Medicine, Bellevue Hospital, can be obtained from that hospital on request. This test evaluates what the patient can do with his disability in performing activities which require movements at the joints, muscle power and coordination. When the physician has these evaluations he is prepared to plan a program best adapted to meet the physical needs of the patient.
>
> *Treatment of Disabilities.*—The following physical modalities are used in treating the disabilities resulting from multiple sclerosis:
>
> 1. Massage: The movements employed in massage are useful in accelerating the flow of blood in the skin; subcutaneous tissue and muscles. Massage is also useful in producing a sedative effect on the nervous system, thus relieving spasm and rigidity of the muscles.
>
> 2. Hydrotherapy: Warm baths tend to produce relaxation of the muscles and relieve pain.
>
> 3. Exercise: There is no form of physical therapy as useful in the treatment of patients with multiple sclerosis as active and passive movements. By means of such exercises the movements of the joints as well as the strength of muscles and coordination may be maintained and increased.
>
> (*a*) Passive movements are useful in overcoming spasticity and contractures of the muscles, adhesions in the joints and tightening of the ligaments. They prevent deformities which may interfere with use of the extremities should remissions occur.
>
> (*b*) Active movements and the arts and crafts activities are used by the therapeutist to strengthen the muscle groups which are below normal to prevent atrophy from disuse and to maintain or reestablish coordination.

OTHER FORMS OF SYMPTOMATIC TREATMENT

Curare.—The usefulness of curare in multiple sclerosis is limited to those cases exhibiting spasticity. Where indicated, its therapeutic value may be twofold. First, the reduction in hyperactive stretch reflex (characteristic of spasticity) may unmask the patient's remaining motor power by increasing the efficiency of motor management. Second, the lessening of spasticity may permit increased range of motion and, coupled with competent physiotherapy, prevent contractures incident to prolonged abnormal postures.

In cases in which spasticity is associated with good voluntary power, curare therapy along with adequate reeducation may yield striking rehabilitative results. On the other hand, in cases in which voluntary strength is at a minimum the limbs will adopt a position dependent on the strongest muscle groups in spite of reduction in hyperirritability of the stretch reflex. In such instances, administration of a preparation of curare along with frequent passive motion may be of value in preventing or overcoming contractures. In some patients the use of curare appears to increase fatigue.

Two types of drugs are in use: aqueous tubocurarine, which is a crystalline derivative of crude curare, and a suspension of d-tubocurarine chloride in oil and wax. The former has the disadvantage of evanescent effect and possibly a narrower therapeutic margin; use of the latter, while showing more promise in the treatment of chronic states, is still frankly experimental. The rationale in the use of this drug is based on its ability to create a partial neuromuscular block. This may be a different physiologic mechanism from the purely paralytic effect achieved with larger doses.

Curare is known to have histaminic side effects. These occur in about 10 per cent of the cases and are ordinarily not troublesome and do not require special care. However, subjective vertigo is sometimes seen, and this in the presence of ataxia may eliminate the drug as a therapeutic choice in a given case. No tolerance has been seen to develop, and over long periods of time there has been no demonstrable effect on bodily economy. Curare is, of course, a potentially dangerous drug, and several deaths have been attributed to its use. It should be prescribed only by physicians who have had experience with its actions, and a supply of neostigmine, its physiologic antidote, should be kept available.

Neostigmine.—Neostigmine has been used much in the manner recommended in the preceding section for curare. This is curious, because the two drugs have pharmacologically opposed actions. Neostigmine was originally prepared as an antidote to curare.

Miscellaneous Agents.—Various drugs, such as amphetamine, dextro-amphetamine ("dexedrine"), diphenhydramine ("benadryl") and tripelennamine ("pyribenzamine") have been used in the treatment of chronic cases and have occasionally appeared to give symptomatic relief.

Antireticulocytotoxic serum (A.C.S.) is under trial, and results will be reported when the tests are completed.

Vitamins have been extensively used. In some cases they seem to have a tonic effect, and their use is definitely indicated if any signs of actual deficiency, such as redness of the tongue, rhagades, anemia and dryness of the skin and hair, appear. They do not appear to have any specific effect on the course of the disease in well nourished patients.

Treatment of Other Symptoms.—Constipation: Constipation is a common concomitant of multiple sclerosis. It may be treated by laxatives; diets; the use of agar-oil mixtures or mucilaginous laxatives, or by such mixtures as figs, senna and prunes. Salts and drastic cathartics should be avoided if possible. Enemas are often necessary.

Urinary Retention and Incontinence: Frequency and urgency of urination may often be helped by moderate doses of tincture of hyocyamus or other antispasmodics, such as "trasentin" (the hydrochloride of diphenylacetyldiethylaminoethanol).

Urinary infection should be vigorously combated, as it tends to cause progression of the disease. Use of forced fluids and antiseptics, such as sulfadiazine by mouth, may be all that is necessary. The use of tidal drainage should be employed if the infection is rebellious or if the bladder is fibrotic and contracted.

In prescribing the indicated forms of therapy the physician must be guided by the knowledge of the disease which the patient has, as well as by his own knowledge of the patient who has the disease.

IV. TREATMENTS FOUNDED ON CURRENT THEORIES OF THE DISEASE

1. *Treatments Aimed at Possible Specific Infections.*—The idea that multiple sclerosis is the result of a specific infection, for example, by a spirochete or virus, is now an old one, which is revived from time to time. The disease has therefore been treated by many antibiotic substances, such as arsphenamine and its modifications, "germanin" (suramin sodium U. S. P.), silver salts, iodides and penicillin, but without obvious results. Fever treatment has also been generally abandoned, as has the use of various vaccines.

2. *Treatments Based on the Theory of Vascular Spasm or Thrombosis.*—A. "Dicumarol": Based on accumulating evidence which suggests the possibility that vascular obstruction, probably a thrombosis of venules, is a link in the chain of causation of multiple sclerosis, "dicumarol," an anticoagulant, has been used in certain cases. Most of the chronic progressive cases treated with this drug continued their downward course.

1. In view of the special and important technical knowledge and skill required in the use of "dicumarol," the physician in charge should be instructed in the purpose, method and dangers of the treatment (much as in insulin treatment of diabetes) before attempting its use. It should be constantly pointed out to all concerned that the treatment cannot be expected to produce improvement of symptoms but appears merely to afford protection against serious future outbreaks. The danger of hemorrhage, and the steps to be taken should it occur, should be particularly emphasized. The patient should understand that the treatment apparently confers relative protection only while it is being adequately administered and that it will probably have to be continued the rest of his life.

2. Before starting the treatment, the physician in charge should assure himself that reliable determinations of the prothrombin time can be secured as often as necessary. The method of Shapiro and associates is considered as the most reliable one for the prothrombin time, and thromboplastin is the preparation used. In this method the clotting time of plasma diluted 1:8 is determined, as well as that of undiluted plasma. The normal prothrombin times obtained by this method are 18 ± 3 seconds for undiluted plasma and 40 ± 10 seconds for the diluted sample of plasma.

The prothrombin time is determined before treatment is begun, twice the first week, weekly for the next month, then every two or three weeks. Dosage of "dicumarol" is regulated to stabilize the prothrombin time of the undiluted plasma around thirty seconds. If the clotting time of whole plasma rises to forty seconds or that of diluted plasma to more than one hundred and twenty seconds, the dose should be omitted for at least four days, then begun at a lower level.

3. The usual initial dose of "dicumarol" is 150 mg. This is immediately cut down to 50 mg. daily, until a proper prothrombin time is reached. Fifty milligrams of the drug can then be given every other day until the prothrombin time drops below thirty seconds, when the dosage is increased again.

4. If hematuria occurs, administration of "dicumarol" *should* at once be stopped and the patient put to bed. A transfusion should be given within twenty-four hours. In stubborn cases repeated transfusions, as many as five, have been found necessary. Administration of vitamin K, even intravenously, has not seemed to be of immediate benefit.

Instruction in the use of "dicumarol" can be obtained from E. R. Squibb & Sons, 745 Fifth Avenue, New York. It must be emphasized that the use of "dicumarol" is still in the experimental stage.

B. Vasodilating Drugs (Other than Histamine): In many cases of multiple sclerosis there are constrictions of the retinal arterioles, with which there are usually associated scotomas and sometimes also a reduction in visual acuity. In most cases in which they were employed, fast acting vasodilating drugs have caused prompt, temporary reduction of the constrictions and of the size of the scotomas (sometimes to zero) and in several instances an increase of visual acuity as well, although the results were not entirely uniform. The inhalation of amyl nitrite almost uniformly produced general retinal vasodilation, and intravenous injections of papaverine hydrochloride sometimes appeared to produce general vasodilation and sometimes not.

Both drugs caused alleviation of scotomas. No clear-cut and indisputable effects in the course of the disease were observed as the result of orally administered vasodilating drugs over a period. The use of vasodilating drugs as a means of long term treatment is still in early experimental stages, despite the fact that under the experimental conditions previously mentioned such drugs, when administered so as to act rapidly and suddenly, may give transient beneficial results. The drugs now in oral use are aminophylline, "syntropan" N. N. R. and papaverine hydrochloride in tolerance doses.

As will be pointed out later, histamine is a valuable vasodilator. A great defect in its use in multiple sclerosis is the brevity of the period of vasodilatation. Theoretically, good vasodilation should be maintained twenty-four hours a day. Histamine may be given as a continuous infusion, but this limits the activity of the patient, a factor which may be disadvantageous if continued over a long period. When employed daily by brief infusion, histamine may be combined with the aforenamed orally administered drugs.

C. Histamine: Because frequent exacerbations and remissions are characteristic of this disease, evaluation of therapy is difficult. Under the circumstances, it is believed that histamine therapy cannot be adequately evaluated until more time has elapsed. Early diagnosis is important if any new treatment is to be tried and appraised. Later gliosis and irreversible changes take place that no type of treatment will alter.

The procedure which is employed at Mayo Clinic is as follows:

Add 2.75 mg. histamine diphosphate to 250 cc. isotonic sodium chloride solution. This solution is given intravenously by the drip method, beginning at a rate of approximately 20 drops per minute; however, the rate of administration depends entirely on the individual's tolerance. At no time should the patient experience any discomfort from the use of this drug. We limit the time for each treatment to a maximum of one and one-half hours and do not administer more than 250 cc. of the solution at a given treatment. In each instance, the response to treatment is watched carefully and the schedule adjusted accordingly. After daily treatment for a period of two weeks, the patient may notice some weakness and fatigue This is usually an indication of overtreatment, in which case we reduced the length of treatment or administer the solution only on alternate days. Some are under treatment for a period of weeks—others for a period of months. Patients are usually ambulatory. It is well known that histamine stimulates the gastric acids; hence, it is important that the patient have food in his stomach at the time of administration of the drug. This treatment is carried out without danger and is easily administered. Since we began this work in 1942, we have given over fifty-five thousand intravenous histamine injections without any untoward effects. Reactions have not occurred, even though we have administered as many as five hundred and sixty-one such injections to a given subject. Repeated injections do not change the patient's tolerance to the drug.

In man, histamine dilates the arterioles, venules and capillaries. Recently we have had occasion to study and to confirm these observations on the human brain. Furthermore, we have been able to demonstrate that histamine is the most powerful vasodilating agent available for increasing blood supply to the central nervous system; hence the rationale for its use in subjects with multiple sclerosis.

D. Sympathectomy: This form of treatment, founded on the vascular theory of multiple sclerosis, has apparently been abandoned.

COMMENT

The foregoing information has been prepared by members of and approved by the Medical Advisory Board of the National Multiple Sclerosis Society. It is designed to furnish to physicians the best information available at the present time, but the Society assumes no responsibility whatsoever for the accuracy or the completeness of the information or for any consequences of its use. The Society will be pleased to give any physician who requests it the benefit of any references where more details can be found and will be glad at all times to furnish any further information that may come to it as to the diagnosis of or the treatment of multiple sclerosis.

Clinical Notes, Suggestions and New Instruments

CUTANEOUS STAINS REMOVED WITH CHEMICAL DEPILATORIES

THEODORE CORNBLEET, M.D.
Chicago

Some valuable remedies for the treatment of the skin suffer from the disadvantage that they cause discoloration. Thus, solutions of potassium permanganate and of gentian violet medicinal are frequently used but leave unsightly blemishes that limit their usefulness. After their application to the nail weeks are required before growth is sufficient to displace them. It takes days for the discoloration of the skin to wear off.

There are a relatively few substances, such as the steroid hormones and several other materials, which can penetrate the epidermis of the skin. The rest are incapable of going beyond the keratin layer, usually not deeper than the outer two or three cell layers of the keratin. This can be demonstrated most easily visually with staining materials.

Most chemical depilatories take advantage of the fact that the alkaline sulfides are capable of softening and dissolving keratin. This protein material accounts in large part for the structure of the hair, the nails and the outer layer of the epidermis. Therefore, when one applies a depilatory for the removal of hair it acts not only on these keratin filaments but also on the surface of the skin between them. If the procedure is properly carried out with a good product, the hairs and a little of the outermost layer of the epidermis are removed without irritation. It takes longer to dissolve away the hair than it does to remove the outer two or three cell layers of the skin. Consequently, if one wants to remove merely the latter, less time is necessary and there is even less chance for irritation to develop. By test, it was determined that the removal of the outer cuticle, or that part discolored by staining materials, required only about half the time needed to dissolve hair. Thus the commercial chemical depilatories "neet," and "sleek" require about five minutes to remove cutaneous stains. It takes a little longer to clear the nails, but these more rugged structures can stand severer treatment. Cutaneous discolorations are thus easily and safely removed. For stains on hair it is better to make up a dilute solution of a sulfide, such as the calcium, which is to be applied for extremely short intervals and followed by rinsing. The procedure is to be repeated until one obtains the desired effect. Great care and some experience is needed to remove the stains and to leave the hair intact.

The preceding method has been found useful for the removal of adherent scales and crusts, which sometimes remain for a while after a dermatitis has subsided. This method must not be used on areas of active dermatologic lesions unless they are chronic and hyperkeratotic. It can be used on healed sites of impetigo or other dermatoses which remain discolored by a medicament. This method is applicable temporarily to some degree on areas discolored by saprophytic fungi, as in pityriasis versicolor and erythrasma. In some of my unpublished work sulfides have been found decidedly effective against yeasts and certain other fungi. In most of the superficial fungous infections the follicles become involved. The chemical depilatories cannot plumb these structures effectively in the short time that they are permitted to remain on the skin. Further observations, however, are being made to explore these possibilities. Pigmentary stains of the skin, such as those which follow an inflammation, are too deeply imbedded and cannot be removed by this method.

SUMMARY

Chemical depilatories have been proved effective in the removal of stains, such as those made by solutions of potassium permanganate and of gentian violet medicinal, from the skin and nails. Removing the very surface of the skin removes the stain.

1819 West Polk Street.

From the Department of Dermatology, University of Illinois College of Medicine, and the Cook County Hospital.

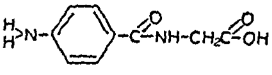
Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

AUSTIN SMITH, M.D., *Secretary.*

PARA-AMINOHIPPURIC ACID.—4-aminobenzoylglycine.—The N-acetic acid amide of para-aminobenzoic acid.—$C_9H_{10}N_2O_3$.—M. W. 194.186. The structural formula of para-aminohippuric acid may be represented as follows:



Actions and Uses.—Sodium para-aminohippurate is excreted by the tubular epithelium of the kidneys in addition to being filtered by the glomerulus. It may be used to measure the effective renal plasma flow and to determine the functional capacity of the tubular excretory mechanism. To measure renal plasma flow, low plasma concentrations (1.0 to 2.0 mg. per hundred cubic centimeters) are necessary. At these concentrations 88 per cent of this compound is removed from the renal blood stream in a single circulation. The normal effective renal plasma flow is 697 ± 135.9 cc. per minute for men and 594 + 102.4 cc. per minute for women. This test cannot be applied to patients receiving sulfonamide compounds, because these develop color with the reagents used in the test.

To determine the functional capacity of the tubular excretory mechanism high plasma concentrations (above 60 mg. per hundred cubic centimeters) of sodium para-aminohippurate must be used. The normal mean value of the "tubular excretory mass" is 77.5 ± 12.9 mg. per minute.

Method of Application.—To Determine Effective Renal Plasma Flow: Sterile solution of sodium para-aminohippurate is injected intravenously in a volume sufficient to produce approximately 2 mg. of para-aminohippurate per hundred cubic centimeters of blood plasma. At this plasma level all the para-aminohippurate in the blood that passes through the kidney is removed and appears in the urine. The urine formed during a definite but relatively short period is collected, and the average amount of para-aminohippurate eliminated is calculated in milligrams per minute. This value divided by the para-aminohippurate content of the plasma in milligrams per cubic centimeter is equivalent to the number of cubic centimeters of plasma per minute that must have passed through the kidneys (effective renal plasma flow).

To Determine Tubular Excretory Mass: Sterile solution of sodium para-aminohippurate is injected intravenously in a volume sufficient to "saturate" the capacity of the tubular cells to excrete para-aminohippurate (above 60 mg. per hundred cubic centimeters of plasma), and the para-aminohippurate content of the plasma is determined in milligrams per cubic centimeter. The amount excreted in the urine is determined in milligrams per minute, this value including both glomerular filtration and tubular excretion. The glomerular filtration rate, using mannitol, a compound that is filtered only through the glomerulus, is determined in cubic centimeters per minute (see description of Sterile Solution of Mannitol). From the glomerular filtration rate and the para-aminohippurate content per cubic centimeter of plasma is calculated the amount of para-aminohippurate that was filtered through the glomeruli in one minute (cc./min. × mg./cc.). Then the total number of milligrams excreted in the urine per minute minus that amount filtered through the glomeruli per minute equals the amount of para-aminohippurate in milligrams per minute excreted by the tubules (tubular excretory mass).

Tests and Standards.—

Para-aminohippuric acid occurs as a white, crystalline powder. It melts at 197.5 to 199 C. It is sparingly soluble in water and alcohol and very slightly soluble in benzene, in chloroform and in ether.

Dissolve 0.1 Gm. of para-aminohippuric acid in 50 cc. of water. Add to 5 cc. of this solution 0.5 cc. of dilute hydrochloric acid and 0.5 cc. of 10 per cent sodium nitrite; then add 10 cc. of diluted ammonia solution containing 0.2 Gm. of betanaphthol: a red color develops in the solution.

Place 50 mg. of para-aminohippuric acid in a test tube and add 0.5 cc. of potassium iodide solution, followed by 2 cc. of water. Add 1 cc. of 5 per cent sodium hypochlorite solution: a red color develops in the solution *(distinction from para-aminobenzoic acid).*

Add 0.45 Gm. of para-aminohippuric acid, 0.2 Gm. of freshly fused sodium acetate, 0.25 Gm. of benzaldehyde and 0.75 Gm. of acetic anhydride to a 25 cc. Erlenmeyer flask. Place on a hot plate and shake the flask constantly until the material becomes liquid. Remove the flask immediately; cool, suspend in 10 cc. of water and filter. Wash the crystals with about 10 cc. of alcohol and then with 10 cc. of ether: the dry crystals melt at 236 to 238 C.

Dissolve 1 Gm. of para-aminohippuric acid in a mixture of 10 cc. of normal sodium hydroxide and 40 cc. of distilled water. Add to 25 cc. of the solution 5 drops of fresh normal sodium sulfide solution and acidify with 0.5 cc. of glacial acetic acid: no more darkening of the solution is produced than in that of a control to which 0.01 mg. of lead as lead nitrate has been added (p. 730, U. S. P. XIII).

Render 10 cc. of the original solution slightly alkaline and pass hydrogen sulfide through it for ten minutes: no precipitate appears.

Add 30 cc. of distilled water and 5 cc. of normal hydrochloric acid to 5 cc. of the original solution: the solution shows no more sulfate than corresponds to 0.2 cc. of fiftieth-normal sulfuric acid, when treated by the U. S. P. test (p. 729, U. S. P. XIII).

Dissolve 0.5 Gm. of para-aminohippuric acid in a mixture of 5 cc. of nitric acid and 15 cc. of distilled water: the solution shows no more chloride than corresponds to 0.1 cc. of fiftieth-normal hydrochloric acid when treated by the U. S. P. test (p. 729, U. S. P. XIII).

Dry 0.25 Gm. of para-aminohippuric acid, accurately weighed, at 110 C. for two hours: the loss in weight does not exceed 0.25 per cent.

Ash about 0.25 Gm. of para-aminohippuric acid, accurately weighed: the amount of residue is not more than 0.05 per cent.

Weigh accurately about 2.5 Gm. of para-aminohippuric acid. Dilute to volume in a 250 cc. volumetric flask. Transfer 50 cc. of the solution to a 250 cc. beaker; add about 20 Gm. of ice and 5 cc. concentrated hydrochloric acid and allow to stand for about three minutes. Titrate the cooled solution with tenth-molar sodium nitrite solution previously standardized against sulfanilic acid, using an outside indicator of starch-iodide paste. Each 1 cc. of tenth-molar sodium nitrite is equivalent to 0.0194 Gm. of para-aminohippuric acid: the para-aminohippuric acid content is not less than 98 per cent and not more than 102 per cent.

STERILE SOLUTION OF PARA-AMINOHIPPURIC ACID SODIUM SALT: The para-aminohippuric acid sodium salt solution is prepared by using equimolecular amounts of para-aminohippuric acid and sodium hydroxide in pyrogen-free distilled water. The *p*H is adjusted with citric acid, the solution made to volume, and the ampuls filled under nitrogen and sterilized by autoclave.

The *p*H of the ampul solution is not less than 7 or more than 7.6.

Dilute 10 cc. of the solution to volume in a 200 cc. volumetric flask. Transfer 50 cc. of the diluted solution to a 250 cc. beaker; add about 20 Gm. of ice, 5 cc. of concentrated hydrochloric acid and allow to stand for about 3 minutes. Titrate the cooled solution with tenth-molar sodium nitrite solution previously standardized against sulfanilic acid, using an outside indicator of starch-iodide paste. Each 1 cc. of tenth-molar sodium nitrite is equivalent to 0.0194 Gm. of para-aminohippuric acid: the para-aminohippuric acid content is not less than 98 per cent or more than 102 per cent.

SHARP & DOHME, INC., GLENOLDEN, PA.

Sterile Solution of Sodium para-Aminohippurate: 50 cc. ampuls. Each 50 cc. contains 10 Gm. of sodium para-aminohippurate, buffered to *p*H 7.0 with citric acid.

Para-Aminohippuric Acid (Reagent): 2 Gm. vials. For use in the preparation of standard solutions.

PENICILLIN (See New and Nonofficial Remedies, 1947, p. 144).

The following dosage forms have been accepted:

COMMERCIAL SOLVENTS CORPORATION, TERRE HAUTE, IND.

Tablets Crystalline Penicillin G Potassium: 100,000 units buffered with glycerides and sodium salts of fatty acids.

PREMO PHARMACEUTICAL LABORATORIES, INC., NEW YORK

Tablets Penicillin Calcium: 50,000 units and 100,000 units with calcium carbonate 0.25 Gm. as a buffer.

Troches Penicillin Calcium: 5,000 units.

CHAS. PFIZER & CO., INC., BROOKLYN

Crystalline Penicillin G Potassium: Bottles containing 100,000, 200,000 and 500,000 units and in bulk in bottles containing approximately one billion units.

NICOTINAMIDE (See New and Nonofficial Remedies, 1947, p. 514).

The following dosage forms have been accepted:

COLE CHEMICAL COMPANY, ST. LOUIS

Tablets Niacinamide: 100 mg.

BREWER & CO., INC., WORCESTER, MASS.

Solution Niacinamide, 100 mg. per cc.: 10 cc. vials. Preserved with 0.5 per cent chlorobutanol.

U. S. VITAMIN CORPORATION, NEW YORK

Solution Niacinamide, 50 mg. per cc.: 2 cc. ampuls.

AMINOPHYLLINE (See New and Nonofficial Remedies, 1947, p. 305).

The following dosage forms have been accepted:

BREWER & CO., INC., WORCESTER, MASS.

Solution Aminophylline: Ampuls 24 mg. in 10 cc.

Solution Aminophylline with Benzyl Alcohol 2%: Ampuls 48 mg. in 2 cc.

THIAMINE HYDROCHLORIDE (See New and Nonofficial Remedies, 1947, p. 506).
The following dosage forms have been accepted:

U. S. Vitamin Corporation, New York

Tablets Thiamine Hydrochloride: 1 mg., 3 mg., 5 mg. and 10 mg.

Solution Thiamine Hydrochloride, 10 mg. per cc.: 1 cc. ampuls and 5 cc. and 10 cc. vials. Preserved with 0.5 per cent chlorobutanol.

Solution Thiamine Hydrochloride, 50 mg. per cc.: 10 cc. vials preserved with 0.5 per cent chlorobutanol.

Council on Physical Medicine

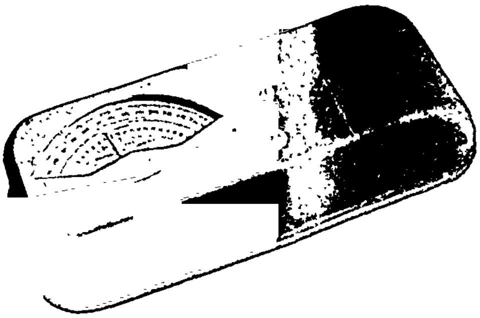
REPORT OF THE COUNCIL

The Council on Physical Medicine has authorized publication of the following reports. Howard A. Carter, *Secretary.*

COLLENS SPHYGMO-OSCILLOMETER ACCEPTABLE

Manufacturer: U. M. A., Inc., 56 Cooper Square, New York 3.

The Collens Sphygmo-Oscillometer is essentially a sphygmomanometer equipped with an aneroid manometer sensitive enough not only to permit readings of systolic and diastolic blood pressure by the oscillatory method but also to permit conclusions as to the patency of peripheral arteries. It does the latter by measuring the amplitude of the arterial pulsations at different cross sections of the upper and lower extremities. The instrument is enclosed in a sturdy metal compartment, which also has a space into which the necessary cuff, rubber tubing and inflating bulb can be tucked. The instrument as a whole is light and portable.



Collens Sphygmo-Oscillometer.

The instrument was examined in a clinic acceptable to the Council on Physical Medicine. It was considered satisfactory for diagnostic use. The directions seem to be well written and include a statement of the disease conditions in which the oscillometer may be expected to give information of diagnostic value.

The Council on Physical Medicine voted to include the Collens Sphygmo-Oscillometer in its list of accepted devices.

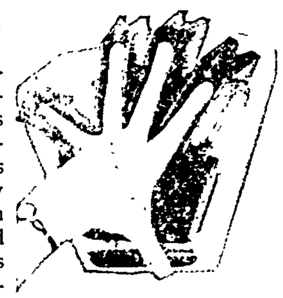
UNDERWOOD MANUFLEX ACCEPTABLE

Manufacturer: Underwood Manuflex Company, 2315 S. W. First Avenue, Portland, Ore.

The Underwood Manuflex is used for manipulating and stretching the joints of the fingers and the wrist.

The device consists of a base to which are attached four freely moving grooved molds. They are so shaped and connected that the base corresponds roughly to the palm of the hand, and the four molds fall into the position of the four fingers from the index to the smallest. Placing the molds in different positions by means of spaced pegs, many variations of movement and stretching of the fingers and wrist can be obtained.

A specimen of the device was examined in a clinic acceptable to the Council on Physical Medicine. The device was used in a wide variety of hand conditions, such as on hands involved by rheumatic arthritis, spastic paralysis, scars following burns, contractures following trauma and infection. When used under supervision of an occupational or physical therapist it was found to be of value in stretching the joints of the fingers, in correcting certain deformities of the fingers and wrist and in assisting in strengthening the intrinsic muscles of the hand. It can be used in a department for occupational therapy or for physical therapy.



Underwood Manuflex.

The folder issued by the company deals mainly with the possibilities of the device for musicians and athletes (e. g. basketball players). The only medical claims made are in a conservatively worded paragraph: "Effective in the treatment and relief of hand conditions resulting from wounds or disease which benefit by exercises for increased circulation and flexibility. Scar tissue, adhesions and swollen joints often come under this category." The fact that it is intended mainly for nonmedical groups is very evident. The promoter is cautioned that the acceptance of the Manuflex by the Council does not carry with it permission to exploit this fact in advertising to nonmedical groups such as musicians and athletes.

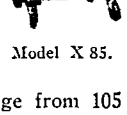
The Council on Physical Medicine voted to include the Underwood Manuflex in its list of accepted devices.

BURDICK CRYSTAL CONTROLLED DIATHERMY ACCEPTABLE

Manufacturer: The Burdick Corporation, Milton, Wis.

The Burdick Crystal Controlled Diathermy, Model X 85, is an apparatus mounted on four casters, equipped with both cable and drum for administration of diathermy to patients and designed to deliver a frequency of 13.66 megacycles per second. The frequency control devices with the unit are actuated by a piezoelectric quartz crystal and are stated to "maintain the frequency within a band width of plus or minus 0.05 per cent of 13.66 megacycles, regardless of how the controls are operated or applications to patient are made." It is also stated that "harmonic and spurious radiations are suppressed to a point well below the allowable limit of 25 microvolts per meter at a distance of 1,000 feet (304.8 meters)."

The firm assumes responsibility for noninterference with radio in case complaints are made. The Federal Communications Commission has awarded "type approval" no. D-471, and a copy of this type approval is on file in the office of the Secretary. Furthermore, the apparatus has been inspected by the Underwriters' Laboratories, Inc., and the device has been accepted for listing.



Model X 85.

The Model X 85 has a voltage tap switch with six positions for operation within tolerable limits of filament and plate voltage on line voltage from 105 to 125 volts. For maximum input of 350 milliamperes of plate current, with a line voltage of 117 volts and voltage tap switch on position four, the line input measures 9.50 amperes and 1,100 watts. The size of the cabinet is 36 cm. by 48 cm. by 54 cm. (14 by 19 by 21 inches). The unit weighs 150 kilograms (330 pounds).

The power output for the appliance in question has been measured in various ways by Council investigators using both the drum and the cable applicators, and the apparatus has been tested clinically. The apparatus conformed to all the requirements as set forth in the Council-adopted article, "Minimum Requirements for Acceptance of Diathermy Apparatus."

The Council on Physical Medicine voted to include the Burdick Crystal Controlled Diathermy, Model X 85, in its list of accepted devices.

with alcohol. Aside from its usefulness in withdrawal treatment, the technic seems about as illogical as the sugar treatment of diabetes or the morphine treatment of the opium habit.

With regard to a possible desensitizing action of alcohol given intravenously, little is known. Ethyl alcohol has never been considered to be antigenic, although some of its contaminants may be. In other countries scientists have studied the effects of injecting beer and wine under the skin of patients with chronic alcoholism. They reported that immunity did not develop and that untoward symptoms were absent after the pain subsided.

Estimates indicate that seven to ten years of heavy drinking are necessary to establish confirmed chronic alcoholism. At least an equal period of successful abstinence under medical observation is required before permanent cure can be claimed. Other aids to treatment will almost surely be developed. Slow or rapid withdrawal of patients from alcoholic beverages, adjuvant medical treatment and psychotherapy for the underlying personality disorder constitute present day approved therapy. "Alcoholics Anonymous" have invoked the additional factors of spiritual inspiration and mass psychology.

Current Comment

YOUR DIRECTORY INFORMATION CARD

Preparations are now being made to publish the new eighteenth edition of the "American Medical Directory." The last previous edition of the Directory was issued late in 1942; wartime restrictions and the shortage of paper and labor have prevented any intervening issues. About November 15, a directory card will be mailed to every physician in the United States, its dependencies and Canada, requesting information to be used in compiling the new Directory. Physicians who receive an information card should fill it out and return it promptly whether or not any change has occurred in any of the points on which information is requested. Physicians should also fill out the right half of the card, which information will be used exclusively for statistical purposes. Even if you have sent in similar information recently, mail the card promptly to insure the accurate listing of name and address. There is no charge for publishing the data, nor are physicians obligated in any way. The Directory is one of the most important contributions of the American Medical Association to the work of the medical profession in the United States. In it, as in no other published directory, may be found dependable data concerning physicians, hospitals, medical organizations and activities. Full information on medical schools, specialization in the fields of medical practice, memberships in special medical societies, tabulation of medical journals and libraries and, indeed, practically every important fact concerning the medical profession in which any one might possibly be interested is also included. If you fail to receive one of these Directory Information cards by December 1, write at once to the Directory Department requesting that a duplicate card be mailed.

LEUKERGY, THE CLUMPING OF WHITE CELLS IN INFLAMMATION

American scientific missions to Europe have returned with a few reports of effective research work in the occupied and devastated countries. The medical mission to Poland for the United Nations Relief and Rehabilitation Administration, for example, returned with a series of contributions from Polish medical scientists. Some of these have recently been published. Among them is a report by L. Fleck and Z. Murczynska on the clumping of white blood cells in cytologically homogeneous groups in inflammation.[1] This condition is called "leukergy." It was found that leukergy increases in infectious diseases. The phenomenon appears to be associated with the agglutination of platelets. Ordinarily the process is slow, taking three to five hours, and involves only a small portion of white cells. In such infectious diseases as typhus, pneumonia or sepsis the process is intensified, and practically all the leukocytes are clumped in groups of 8 to 20 cells within ten to twenty minutes. This increased leukergy persists during the stage of convalescence. The clumping of lymphocytes becomes more definite with decrease of temperature, whereas neutrophils clump more readily in fever. The authors suggest that serologic factors may be involved. A study of these factors may lead to further understanding of the inflammatory process.

LOCAL HEALTH UNITS

Under the auspices of the American Public Health Association a conference to consider effective ways of improving local health services was attended recently by delegates of sixty-five organizations, including the American Medical Association. The role of the local health department, the state health department and voluntary citizen organizations were discussed. Throughout the conference the six basic functions of a local health department that were set forth in the report by Emerson and Luginbuhl [1] were emphasized. What each organization can provide for the community must be determined by careful study. One plan cannot be applied nationally with the hope that it will be equally effective for all communities. County and state medical societies should take active parts in all planning. The House of Delegates of the American Medical Association has expressed its approval of plans to cover the population by local units of health jurisdiction. The members of the medical profession must participate and lend sufficient aid to achieve complete local health protection in cooperation, not competition, with medical practice.

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[1] Fleck, L., and Murczynska, Z.: Leukergy: Clumping of White Blood Cells in Cytologically Homogeneous Groups: A New Phenomenon of Inflammation, Texas Rep. Biol. & Med. 5:156-167, 1947.

[1] Emerson, H., and Luginbuhl, M.: One Thousand Two Hundred Local Public Health Departments for the United States, Am. J. Pub. Health 35:898-904 (Sept.) 1945.

ORGANIZATION SECTION

Washington Letter

(From a Special Correspondent)

Oct. 30, 1947.

Dr. Hawley Reports Increase in Alcoholism Among Veterans

Dr. Paul R. Hawley, medical director, Veterans Administration, stated in a speech before the Southern Governor's Conference at Asheville, N. C., that chronic alcoholism is increasing among veterans "by leaps and bounds." He said that in two thirds of 10,000 patients expected to require treatment this year for alcoholism the condition involved pure uncomplicated alcoholism and had nothing to do with mental illness. The agency also announced that it plans a special research project on fertility problems of the 1,600 paraplegics of World War II. Rejected was a proposal for setting up an artificial insemination clinic for married veterans who had suffered loss of natural sexual function. Dr. Hawley announced the transfer of Dr. Robert C. Cook, deputy medical director since January 1946, to the managership of the Veterans Hospital at Fort Logan, Colo.

Science, Research and Public Policy

The fourth report of a five volume series, "Science and Public Policy," issued by the President's assistant, John R. Steelman, as head of the President's Scientific Research Board, stresses that the shortage of scientific personnel is dangerous to national welfare and security. It is attributed to heavy postwar demand for scientists and severely reduced wartime training of potential scientists. Mr. Steelman said it is "of the utmost urgency that steps be taken to increase and improve our scientific manpool."

In the last of his five reports to President Truman Mr. Steelman declared that national expenditures for research, including government expenditures for this purpose, should eventually be tripled. The report was titled "The Nation's Medical Research," and it warned that there is a critical shortage of research workers in medicine and allied subjects. The report pointed out that some of the most prevalent diseases are receiving little attention in federal medical research programs, among them heart disease, influenza, rheumatism, kidney disease, sinusitis and the common cold. The 118 page report recommended that the nation as a whole, government, industry, universities and other private groups, triple outlays for research as quickly as possible with an objective of spending $300,000,000 annually by 1957. Mr. Steelman declared that most of this expansion must come from public funds but that federal support for research should supplement and not replace other financing.

Increased Basic Scientific Research Need Stressed

W. W. Waymack, one of the five members of the U. S. Atomic Energy Commission, told a Unitarian Association audience here that the present wave of nationalism may cut the United States off from foreign discoveries in basic science on which it has long depended. He said that it is vital for America to strengthen herself in basic scientific research. "We have a nucleus of unquestioned genius in basic research. But up to now the American superiority has been in applied science, not in what is called basic or pure scientific research—the search for new fundamental knowledge about the nature of things, regardless of whether anybody can see an immediate practical application or not. Yet, it is in that field that the great advances are made. Let's be blunt about it—there is today no assurance that basic science is going to be as freely international as it used to be. There is danger, if the world situation deteriorates, that a wave of alarmed nationalism will for the first time engulf science, too."

Health Service Studying Russian Treatment for Cancer

The National Cancer Institute of the U. S. Public Health Service is reported to have obtained an original manuscript describing in detail the Russian "KR" treatment for cancer and to have procured from London the same strain of organism as that used by Klyueva and Roskin in their reported successful treatment. Institute research workers are endeavoring to check the claims made by Nina Klyueva and Gregori Roskin in their treatment of cancer.

Medical Supplies Stocked by War Department

The War Department revealed that among its vast stockpile of strategic materials being accumulated in the event of an international emergency are medical supplies. The stockpiling plan, part of an industrial preparedness program, will cost $2,100,000,000 over a five or six year period.

Sells Entire Sulfonamide Stock

The War Assets Administration announced here that it was offering its entire $2,500,000 stock of sulfonamide drugs in an "inventory clearance" sale beginning October 27.

Limb Manufacturers

Delegates to the thirtieth annual convention of the Orthopedic Appliance and Limb Manufacturers' Association were so pleased with their deliberation here that members decided to hold their 1948 convention in the capital of the United States.

Coming Medical Meetings

Conference of State Medical Society Secretaries and Editors, Chicago, A.M.A. Headquarters, Nov. 7-8. Dr. George F. Lull, 535 N. Dearborn St., Chicago 10, Secretary.

American Academy of Allergy, St. Louis, Hotel Jefferson, Dec. 15-17. Dr. Theodore L. Squier, 425 E. Wisconsin Ave., Milwaukee 2, Secretary.

American Academy of Dermatology and Syphilology, Chicago, Palmer House, Dec. 7-11. Dr. Earl D. Osborne, 471 Delaware Ave., Buffalo, N. Y., Secretary.

American Academy of Pediatrics, Dallas, Texas, Dec. 8-11. Dr. Clifford G. Grulee, 636 Church St., Evanston, Ill., Secretary.

American Association of Railway Surgeons, Chicago, Nov. 23-25. Dr. Raymond B. Kepner, 547 West Jackson Boulevard, Chicago 6, Secretary.

American Otorhinologic Society for the Advancement of Plastic and Reconstructive Surgery, New York, Nov. 13. Dr. Norman N. Smith, 291 Whitney Ave., New Haven 11, Conn., Secretary.

American Society for the Study of Arteriosclerosis, Chicago, Hotel Knickerbocker, Nov. 2-3. Dr. O. J. Pollak, Wilmington General Hospital, Wilmington 14, Delaware, Secretary.

American Society of Anesthesiologists, New York, Hotel New Yorker, Dec. 4-5. Dr. Curtiss B. Hickcox, 745 Fifth Ave., Room 1503, New York 22, Secretary.

American Society of Tropical Medicine, Atlanta, Ga., Dec. 2-4. Dr. Norman H. Topping, National Institute of Health, Bethesda 14, Md., Secretary.

Association of Military Surgeons of the United States, Boston, Hotel Statler, Nov. 13-15. Col. James M. Phalen, Army Medical Museum, Washington 25, D. C., Secretary.

New York State Association of Public Health Laboratories, Albany, Nov. 7. Miss M. B. Kirkbride, New Scotland Ave., Albany 1, Secretary.

Post Graduate Medical Assembly of South Texas, Houston, Texas, Coliseum, Dec. 1-3. Dr. E. Trowbridge Wolf, 229 Medical Arts Bldg., Houston, Texas, Secretary.

Puerto Rico, Medical Association of, San Juan, Dec. 10-14. Dr. Jeramfel Cordero, Box 3866, Santurce, Secretary.

Radiological Society of North America, Boston, Nov. 30-Dec. 5. Dr. Donald S. Childs, 607 Medical Arts Bldg., Syracuse 2, N. Y., Secretary.

Seaboard Medical Association of Virginia and North Carolina, Virginia Beach, Va., Dec. 2-5. Dr. Clarence Porter Jones, 3117 West Ave., Newport News, Va., Secretary.

Southern Medical Association, Baltimore, Nov. 24-27, Mr. C. P. Loranz, Empire Bldg., Birmingham 3, Ala., Secretary.

Southern Surgical Association, Hollywood, Fla., Dec. 9-11. Dr. Alfred Blalock, Johns Hopkins Hospital, Baltimore 5, Secretary.

Southwestern Medical Association, Phoenix, Ariz., Hotel Westward Ho, Nov. 6-8. Dr. Louis W. Breck, 116 Mills St., El Paso, Texas, Secretary.

Western Surgical Association, Colorado Springs, Broadmoor Hotel, Dec. 4-6. Dr. Warren H. Cole, 1853 West Polk St., Chicago 12, Secretary.

JOINT COMMITTEE FOR THE COORDINATION OF MEDICAL ACTIVITIES

Report of Meeting in Chicago, August 16

The Joint Committee for the Coordination of Medical Activities met in the Board Room of the American Medical Association Building in Chicago on Saturday, Aug. 16, 1947. The meeting was called to order by the Chairman, Dr. Ernest E. Irons, at 10 a. m. Members and liaison members present were:

Dr. Arthur W. Allen, Boston. (American College of Surgeons)
Dr. Donald G. Anderson, Chicago. (Secretary, A.M.A. Council on Medical Education and Hospitals)
Brig. Gen. George E. Armstrong, Washington, D. C. (Office of the Surgeon General, U. S. Army)
Dr. Walter L. Bierring, Des Moines, Iowa. (Federation of State Medical Boards)
Mr. George W. Cooley, Chicago. (A.M.A. Council on Medical Service)
Dr. W. Palmer Dearing, Washington, D. C. (U. S. Public Health Service)
Dr. Warren F. Draper, Washington, D. C. (American Medical Association and American Red Cross)
Capt. William E. Eaton, Washington, D. C. (American Medical Association and U. S. Navy)
Dr. Charles H. Evans, Warrenton, Ga. (American Pharmaceutical Association)
Dr. Robert P. Fischelis, Washington, D. C. (American Pharmaceutical Association)
Dr. Johnson F. Hammond, Chicago. (American Medical Association)
Dr. Elmer L. Henderson, Louisville, Ky. (American Medical Association)
Mr. Thomas A. Hendricks, Chicago. (A.M.A. Council on Medical Service)
Dr. Hugo F. Hullerman, Chicago. (American Hospital Association)
Dr. Ernest E. Irons, Chicago (American College of Physicians)
Dr. Victor Johnson, Rochester, Minn. (A.M.A. Council on Medical Education and Hospitals)
Dr. George F. Lull, Chicago. (American Medical Association)
Dr. J. J. Moore, Chicago. (American Medical Association)
Dr. H. B. Mulholland, Charlottesville, Va. (A.M.A. Committee on Rural Medical Service)
Dr. James E. Paullin, Atlanta, Ga. (American Medical Association)
Col. Paul I. Robinson, Washington, D. C. (Office of the Surgeon General, U. S. Army)
Rev. A. M. Schwitalla, S.J., St. Louis. (Catholic Hospital Association)
Dr. R. L. Sensenich, South Bend, Ind. (American Medical Association)
Dr. E. R. Serles, Chicago. (American Pharmaceutical Association)
Dr. H. H. Shoulders, Nashville, Tenn. (American Medical Association)
Mrs. M. V. Shuler, Chicago. (A.M.A. Bureau of Information)
Miss Mary Switzer, Washington, D. C. (Federal Security Agency)

CHANGES IN MEMBERSHIP

The Chairman announced the appointment of Dr. Walter L. Palmer, Chicago, as a member of the American College of Physicians Committee to take the place of Dr. LeRoy H. Sloan, resigned.

There was presented a communication addressed to the Chairman by Major Gen. R. W. Bliss, Surgeon General of the U. S. Army, in which it was stated that Lieut. Col. William N. Piper had been transferred from the Office of the Surgeon General and that Brig. Gen. George E. Armstrong, Deputy Surgeon General and Col. Paul I. Robinson, Chief of Personnel, had been appointed to represent the Office of the Surgeon General in the liaison membership of the Joint Committee.

The Chairman announced that the American Pharmaceutical Association had been invited to appoint representatives to liaison membership in the Joint Committee, and that Dr. E. R. Serles of Chicago, president, Dr. Charles H. Evans of Warrenton, Ga., chairman of the Professional Relations Committee, and Dr. Robert P. Fischelis, secretary of the American Pharmaceutical Association, had been appointed and were in attendance.

Father Schwitalla asked permission to bring an "understudy" to the next meeting in the person of Father John P. Flanagan, who has recently been appointed Executive Director of the Catholic Hospital Association. The Committee concurred in the expression of the Chairman that Father Flanagan would be more than welcome but sincerely hopes that Father Schwitalla will retain his own membership.

REPORT TO THE HOUSE OF DELEGATES

The Chairman presented the annual report of the Joint Committee for the Coordination of Medical Activities, which he had submitted to the House of Delegates of the American Medical Association at its annual session in June, and read the following adopted report of the reference committee to which it had been referred:

> "The reference committee believes that the work of this Committee in acting as a liaison with all medical services is invaluable. It strongly urges that the Committee continue to function and recommends the adoption of the report.

The Joint Committee, on motion duly seconded and carried, approved the annual report as prepared by the Chairman. (This report was printed in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, June 21, p. 715.)

HOSPITAL RESIDENCIES AND GRADUATE EDUCATION

Dr. Donald G. Anderson, successor to Dr. Victor Johnson as Secretary of the Council on Medical Education and Hospitals, submitted the following statement on the present status of hospital residencies and graduate education:

During the past year the number of residencies and fellowships approved by the Council on Medical Education and Hospitals of the American Medical Association has increased from 8,930 to 12,003, a gain of 3,073. In 1941 there were only 5,256 approved residencies, so that the current figure represents an increase of 6,747 residencies, or 128 per cent over the peak prewar figure. There is no way of accurately determining how far this great expansion of training opportunities has gone toward meeting the demand for residencies. Very few unfilled residencies have been reported to the Council office; on the other hand, the number of physicians who are seeking information about open appointments has dwindled to handful. It probably would be fair to estimate that most physicians seeking residency training have been able to secure satisfactory appointments although at times only after some delay. Until there is clear evidence tha the need for this type of training has been met fully, it would appea desirable to continue to strive to expand the residency program to th capacity of the hospitals and their personnel for giving effective training A steady flow of applications for approval of newly created residencies i still coming in to the Council office, so that a further increase in th total number of residencies during the coming year definitely can b expected.

In the field of graduate education represented by graduate assemblie and postgraduate and continuation courses, 1,644 courses were offere during the past year. Of these, 239 were short review courses of fiv days' duration or less, 1,291 were courses of more than five days' duratio and 14 were classified as clinical conferences or graduate assemblies. Th steadily growing popularity of such courses can be judged from the fac that in two years the annual attendance has increased from 18,000 t 59,000. At the moment there is no evidence of any slackening of intere in providing such training since more than 800 courses already have bee listed for the period July 1 to Dec. 30, 1947.

Following is a résumé of the discussion on Dr. Anderson' presentation:

The trend in the increase of hospital residencies is general througho the country and not confined particularly to the larger communities. Th Council on Medical Education and Hospitals has no definite informatio as to any tendency on the part of residents to drift from place to plac because of dissatisfaction. In almost every field the present availab residencies are such as to qualify the men for certification by specialt boards; after the Council passes on a residency, it is submitted to t specialty board concerned for approval, and the Council does not gi final approval or list a hospital as approved for residencies in specialti unless it is also approved by the specialty boards; a few of the boar do not cooperate with the Council in this connection.

When a man takes a residency in a hospital approved by the Coun on Medical Education and Hospitals, nothing is said in his appointm as to whether the residency is for one, two or three years, and in th cases in which a board requires a three year residency it is up to candidate to obtain those three years wherever he can. It is not requi that a three year residency be continuous in the same institution. Sc hospitals consider themselves capable of providing only one year residency training and say that if they cannot get residents unless they provide three year residencies, they may be obliged to consider dropping their residencies altogether. However, although the student is prone to throw the burden on the hospital, it would appear that if he has one year at one hospital, one at another and so on, the specialty boards would be satisfied. Such migratory residencies may not be the best thing for the person in that by serving as resident in perhaps three different hospitals, he might merely be repeating his work each year and thus gain little growth. One of the best examples of a residency of limited duration is in orthopedic surgery in a children's hospital; a man seeking certification in orthopedic surgery would not want to spend his whole time in a children's hospital; it is that sort of limitation which is involved in many institutions where only one year of residency is allowed.

Father Schwitalla asked for opinions as to the necessity for agreement between universities and specialty boards and also asked if there has been any coordinate attempt to harmonize efforts of universities with board requirements. He thought there probably is room for interchange of opinion and perhaps, some time in the future, conferences might be desirable between schools—graduate schools and universities that are recognized as clinical schools—and the specialty boards. Dr. Johnson thought that if a hospital had a program leading to a master's degree, such conferences probably would be acceptable. As an illustration of what he had in mind that should be clarified, Father Schwitalla presented the following example: A man has spent one or two years in an approved residency in a nonuniversity hospital; in another hospital, perhaps in the same community, members of the university faculty are doing the teaching and the resident wants to transfer to the university program. However, if he does so, he is not allowed full credit for the year, or two years, in the first hospital because the university refuses to recognize the control of the residency in that hospital; the same thing sometimes applies when a man transfers from one university hospital to another; the men concerned are mostly those who already have an M.D degree and are working toward an M.A. or Ph.D. degree.

It was Dr. Johnson's opinion that the specialty boards would have no concern over that sort of situation, that it is entirely an academic matter and that the boards would not be even slightly concerned in cases in which a man is working for a degree other than the M.D. Dr. Irons agreed with Dr. Johnson and saw no need for the specialty boards to be concerned.

LICENSURE

Dr. Bierring offered the following report on the status of medical licensure with particular reference to licensure of graduates of foreign extramural schools:

Three of the extramural European *schools* with which the United States licensing boards have had reason to be concerned are located in Scotland. They have been in existence for a considerable number of years and have been, principally, clinical schools in which the faculty is comprised of members of the faculty of the University of Glasgow and the University of Edinburgh *and, in* a few instances, of St. Andrews University and also of Fellows of the Royal College of Surgeons and the Faculty of Medicine of Glasgow University. The teaching of anatomy and the basic sciences in these schools always has been below that of university training. While there has been no special inspection of these schools, a great deal of attention has been paid them, particularly by the Association of American Medical Colleges.

Since 1939 the tendency on the part of the American licensing boards has been not to accept for licensure graduates of these schools. However, *since 1944* such graduates have been accepted for licensure in New York state and as a result they are now applying in other states for reciprocity. In some few instances, they have been accepted because the states concerned have reciprocity agreements with New York. The general tendency at the present time is to look *more closely into the credentials of these* graduates and not to admit them to licensure. An item in The Journal of the American Medical Association for August 9 (p. 1254) stated that a newly appointed assistant director in the headquarters of the United Nations World Health Organization is a graduate of St. Andrews and has a degree of Doctor of Public Health. In Great Britain such graduates receive no degree; they are admitted to the Conjoint Examination Board of England and the Triple Qualification Board of Scotland, are placed on the Register to practice and are designated as Licentiate of the Royal College of Physicians and Member of the Royal College of Surgeons.

Another matter troubling licensing bodies at present is the tendency toward development of more state boards of examiners in the basic sciences. There are now nineteen such boards in eighteen states and the District of Columbia. One of the main purposes in the original establishment of these boards was *to limit* the licensure of improperly educated practitioners of the healing arts. Only six of the basic science boards accept the certificate of the National Board of Medical Examiners, and five of them have no reciprocal argreements with other boards. The problem with respect to medical licensure is that while the basic purpose of these boards was to determine a general knowledge of the basic sciences in order to qualify an applicant for admission to examination for licensure *in the healing* arts, gradually they have come to be agencies that actually determine medical licensure. A year ago a prominent physician said that the basic science examination was the "alpha of the omega of medical licensure." An osteopath or a chiropractor may be a member of a basic science board. There are three states in which a Doctor of Veterinary Medicine is a member; in five states an osteopath is a member and in four states a chiropractor is a member.

In response to a question from Miss Switzer, Dr. Bierring said that there have been graduates of the best medical schools who have failed to pass the basic science board examinations, largely because of the nonmedical examiners, and that another difficulty is in the methods of grading, which vary from subject passing grades of 70 to 75 per cent for a general average; a number of states require 75 per cent in each subject—the board in New Mexico requires 85 per cent passing grade and 75 per cent in each subject!

Dr. Johnson expressed the opinion that the basic science board constituted another barrier to the movement of physicians from one state to another and that the recent graduate does not have much trouble in the examinations but a graduate of twenty or thirty years ago is often in difficulty.

In reply to a question by Dr. Moore, Dr. Bierring stated that by action taken at a meeting of the Federation of State Medical Boards a year ago and confirmed again in February 1947 no medical graduates of foreign schools, except those of the university medical schools of Great Britain, would be considered for admission to examination for licensure unless they had taken an additional year of training in this country.

THE GENERAL PRACTITIONER

REPORT OF SUBCOMMITTEE ON SPECIALTY BOARD FOR GENERAL PRACTITIONERS

Dr. Sensenich, a member of the Subcommittee, presented the following:

The meeting of county medical society officers in Atlantic City at the time of the annual session of the American Medical Association, the so-called Grass Roots Conference, afforded a good perspective of the present situation in the general practice of medicine. To this meeting were invited the officers of the county medical societies, the organizations which are *the backbone of the organized medical profession in this country.* More than 300 physicians from widely distributed areas were in attendance. The desirability of a specialty board for general practitioners was discussed at some length, and it is doubtful that the movement to that end is gaining any particular strength. The Indiana Board of General Practice, the pioneer in the field, was established with excellent motives and outlines; it is still very young and it is not yet definite as to what its place in medicine is or as to what should be done to carry out its objectives. However, the position of the general practitioner with respect to his place *in the hospital is acute. It does not appear from study and observation* that the general practitioner himself is particularly interested in the establishment of a specialty board which will "certify" him. He is interested, however, in the position that he is a member of the only group in the whole medical profession that is not organized for itself and he feels himself to be on the defensive and unable to protect himself. This feeling will stimulate some kind of united effort on the part of general practitioners and may add to the tension that is evident in their hospital relationships. Out of all this a certifying board, or at least some machinery *for recognizing superior work, might evolve, a board to improve the* standards of the general practitioner and not too much involved in attempts to protect his selfish interest.

Some kind of general practitioners' organization is inevitable. It is not sure that that would improve the situation at all, but they are sufficiently distressed and unhappy to try almost anything. The danger lies in the fact that such an organization, will be more concerned with protecting the group against what they believe to be inequities and disadvantages suffered only by their group.

SECTIONS ON GENERAL PRACTICE IN HOSPITALS

Dr. Anderson informed the Committee as follows regarding the activity of the Council on Medical Education and Hospitals with respect to the establishment of general practice sections in hospitals:

The Council on Medical Education and Hospitals has been active in advancing the development of general practice sections in hospitals. At the meeting of the House of Delegates of the American Medical Association in June, the Council presented a supplementary report which reviewed the policy of the Council, the Advisory Board for Medical Specialties and *the House of Delegates with respect to the appointment of general practitioners* to hospital staffs. This report was later published in The Journal, June 21, page 711.

In the report it was pointed out that any policy of limiting staff appointments to physicians certified by specialty boards or holding membership in certain special societies is contrary to the principles of the Council and of

> the Advisory Board for Medical Specialties. The report went on to cite the action of the House of Delegates in 1946 when it passed a resolution encouraging hospitals to establish general practitioner sections. This resolution specifically stated that the creation of such services would not prevent hospitals from being approved for the training of interns or residents.
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> The Council requested the authorization of the House of Delegates to amend the section of the Essentials of a Registered Hospital dealing with the establishment of staff sections so as to include specific mention of general practice sections. This amendment was approved by the House of Delegates.
>
> Reprints of the supplementary report and copies of the revised Essentials of a Registered Hospital have been sent to every one of the Council's registered hospitals and to all the hospital associations. Also included were reprints of an article by Dr. M. H. Miller describing the operation of a general practice section in a large general hospital over a period of eight years.
>
> In addition to these activities, the Council has been active in advising physicians and hospitals seeking information about the establishment of general practice sections in specific hospitals. In order that it may be prepared to render maximum assistance in this respect, the Council is trying to collect detailed information regarding the working arrangements in hospitals that have already established general practice sections. In conducting the annual census of registered hospitals this fall, the Council will secure information as to how many hospitals have established general practice sections. The data obtained in this way should be helpful in determining how much progress is being made in securing the place of the general practiitoner in the hospitals of this country.

During the discussion and in reply to various questions, Dr. Anderson stated that a general practice section is simply the part of the hospital where the general practitioner enjoys staff membership and has the privilege of bringing his patients. It is more an administrative than a physical set-up. The Council on Medical Education and Hospitals has discussed but has not succeeded in finding a satisfactory definition of a general practice section or of general practice itself. For the present, at least, it would seem wise to hold to general principles such as that the general practitioner should be allowed to do whatever he is qualified to do. As far as a patient is concerned, a general practice section in a hospital means that if he is being taken care of by a general practitioner, that practitioner can continue to take care of him in the hospital.

Dr. Bierring asked if it should not be the purpose of the Council to develop a standard that the general practice section is the part of the hospital which should be the principal service in the hospital from which reference to special services should be made, and Dr. Anderson thought the Council certainly should encourage such a development.

Dr. Sensenich suggested that it might be advantageous if, for certification, the specialty boards would require a certain amount of general service either inside or outside a hospital on some basis that would carry out Dr. Bierring's idea. Father Schwitalla asked whether Dr. Bierring implied that the functions of the general practitioner and the diagnostician are identical, and Dr. Bierring stated that to be his opinion. Father Schwitalla said that the direction the general practice development is taking in some hospitals is not exactly the direction pointed out by Dr. Bierring, but that perhaps the whole tension could be relieved if Dr. Bierring's plan could be maintained.

Dr. Bierring expressed the opinion that the general practitioner of the future is going to be able to recognize the conditions that require his services, that he is going to take care of 75 per cent of all illnesses and that the young man now coming up, with two years of rotating internship and possibly two years of residency training in general practice, is going to be the family physician of the future.

REPORT ON ACTION OF THE HOUSE OF DELEGATES OF THE AMERICAN MEDICAL ASSOCIATION

Dr. Shoulders presented a statement as follows:

> During my two years as President-Elect and President of the American Medical Association, I was the recipient of many complaints that the medical profession was not giving the best service to the people. One criticism which I heard many times was that the medical student during his education is entirely under the influence of specialists, that his training is all to the end that he may be qualified to take a specialty board examination. It seemed to me that a committee of the American Medical Association might be appointed which would be widely representative of the profession and which might conduct a study and present a report that could be very helpful. My entire thought in making a recommendation to that effect to the House of Delegates was that by this means it might be discovered whether or not the complaints have any justification in fact. The proposed committee could: (1) define the term "general practitioner," or "general physician," on a functional basis; (2) determine whether or not there is need for a large increase in the number of medical graduates and, if so, its extent; (3) study the present program of medical education and training, both undergraduate and postgraduate, to determine whether or not the content and administration of the program is properly adjusted to the present day needs of the people; (4) study the possibility and feasibility of utilizing smaller community hospitals in a program for the training of general practitioners and the possibility of approving such institutions for such training when a teaching program is properly organized and administered; (5) study the means by which communities in need of additional services may be aided; (6) study such other questions as the committee itself may determine to be necessary in arriving at sound conclusions concerning the entire field of medicine, and (7) propose a long range program designed to overcome present insufficiencies and to meet future needs.
>
> The House of Delegates approved my recommendation, and I understand from Dr. Irons that the committee will be appointed by the Board of Trustees at its September meeting.

Miss Switzer remarked that there are many efforts on the part of both public and private agencies in special fields—as, for instance, in the Federal Security Agency, the well financed projects in cancer research and mental hygiene—which seek to encourage medical schools to give emphasis in their curriculums to special subjects, and that this prodding for orientation of medical education on the special side should be taken seriously into consideration in any study that is pointed to improve the education of a medical student who may become a general practitioner; if the funds available for special projects could be used to improve education for general practice, the natural result would be to bring eventual improvement in the practice of specialties.

Dr. Lull discussed the economic side of the matter, saying that a man who is certified as a specialist is supposed to limit his practice to that specialty and eventually he is going to find that he cannot make a good living because the country can absorb only so many specialists.

Dr. Johnson spoke in behalf of the specialty boards: It is clear that no one knows how to meet the situation, but making the American boards the whipping post ought to be avoided. The boards have done a fine job. On several occasions the whole blame for the present situation has been laid at the door of the boards; that is loose thinking and entirely unwarranted.

AMERICAN ACADEMY OF GENERAL PRACTICE

Dr. Bierring presented a report which he had prepared, after some investigation, on the newly organized American Academy of General Practice.

After discussion, the Joint Committee adopted a motion that Dr. Bierring inform Dr. Davis, president of the Academy, that the House of Delegates of the American Medical Association has authorized the appointment by the Board of Trustees of a committee to study the problems of the general practitioner and of general practice, and that this Joint Committee will be glad to recommend that the conclusions of the new committee be transmitted at the proper time to Dr. Davis.

REPORT OF SUBCOMMITTEE ON LEGISLATION FOR A NATIONAL DEPARTMENT OF HEALTH

Miss Switzer reported for the Subcommittee on Legislation for a National Department of Health as follows:

> The original Taft Bill, S. 140, was somewhat amended to eliminate the professional qualifications required of the three undersecretaries, to create the three divisions—health, education and security—and to charge each of the three undersecretaries with special responsibility for each division. The Bill was reported out of committee but did not come to a vote in the Senate. It probably will come to a vote early in the next session of Congress. Then, of course, it has to go to the House.
>
> The relation of S. 140 to H. R. 545 would be very important if the latter should retain its provision for the establishment of an independent health agency. If S. 140 is enacted into law, it is probable that the health agency provisions of H. R. 545 will be eliminated.
>
> The chances of a purely professional person being in charge of the proposed Division of Health would be about 50-50, depending on the personal preference of the President making the appointment. If the present programs remain more or less as they are, the present situation probably will not be changed much, but if there should be an elaborate medical care program, it is reasonable to expect some changes.

The Chairman thanked Miss Switzer for her report and stated that the subcommittee would be continued to report when there are further developments.

Permission was requested by the Chairman, and was granted, for the continuation of the subcommittees which reported at this meeting so that further progress reports on hospital residencies, licensure, general practice and so on can be heard at the next meeting.

HOSPITAL SURVEY AND CONSTRUCTION PROGRAM

The Chairman asked Miss Switzer to inform the Joint Committee regarding the progress of activity authorized under the Hill-Burton Hospital Survey and Construction Act, which she did as follows:

> Shortly after the last meeting of this Joint Committee, followed by a meeting of the Federal Hospital Council in Washington, D. C., Mr. Graham Davis of the American Hospital Association, a member of the Joint Committee, discussed with me his concern that in the state advisory councils provided for under the Hospital Survey and Construction Act there is not enough leadership taken by the state medical societies. I have found that more has been done than perhaps Dr. Davis or I realized. I think Dr. Davis felt that some direct recommendation to state and county medical societies as to what they might do in connection with the advisory councils would be helpful. Perhaps something could be printed in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION to call special attention to the necessity for greater activity on the part of the state associations.
>
> A pamphlet summarizing the law and regulations governing the Hospital Survey and Construction Program was distributed widely at Atlantic City, N. J., during the annual session of the American Medical Association in June. There has been good response to this pamphlet, and it is felt that considerable progress is being made. However, we still continue to need the very close cooperation of the state medical societies with the state advisory councils. Almost all the states have physicians on the advisory councils. It would be helpful, increasingly so as money becomes available and as state plans come up for discussion and approval, to remind the medical societies that they have an obligation and a stake in this program. There is no crisis, but there is need for a constant urging of attention. A good deal of public education is needed, not only of the patient public but also of the physician public. There are several things the U. S. Public Health Service is doing through the Federal Hospital Council, one of which is the establishment of an Office of Program Planning.
>
> Dr. F. S. Crockett, chairman of the Committee on Rural Medical Service, is a member of a special rural subcommittee of the Federal Hospital Council and, to fill a vacancy, Dr James E. Paullin, a member of this Joint Committee, is being asked to become a member of the Council.

Dr. Lull said he would include in his Secretary's Letter at an early date a statement such as that suggested by Miss Switzer and would recommend that the Council on Medical Service include a similar statement in its News Letter.

Dr. Sensenich said that one reason for slowness or lack of applications to participate in the program may be that some communities which have been accustomed to getting things done on their own without outside aid are far down on the priority list and thus have little or no interest; that obviously the areas which have first, second and third priorities are not organized, nor have they given much thought to the program, and that in such instances the state medical societies can be of considerable assistance. Miss Switzer agreed emphatically, saying that the state medical associations through their component county societies—community units most accustomed to working in an organized manner—could do a splendid job if they would. Dr. Mulholland stated that many areas which could get "A" priority do not have the finances to construct and maintain the facilities even with federal aid, and that some communities which have set aside money for the purpose still cannot do it because of present costs and are becoming discouraged. Miss Switzer agreed that costs probably were having a delaying effect on completion of the plans. Only a few state plans, she said, have been completed and approved.

STUDENT NURSE RECRUITMENT PROGRAM

The following communication from Mr. George Bugbee, executive director of the American Hospital Association, was read by the Chairman, who presumed that it contained the substance of what Mr. Graham Davis would have reported if he could have been present:

> I thought you would like to be brought up to date on the progress of the 1947 Student Nurse Recruitment Program which, as you know, is being conducted by the American Hospital Association and the Advertising Council, Inc., in cooperation with national nursing organizations and the American Red Cross. The program also has the endorsement and active support of such national organizations, in addition to the American Medical Association, as the American Medical Association Woman's Auxiliary, the U. S. Chamber of Commerce, Rotary International, Kiwanis, the National Tuberculosis Association and the American Public Health Association, to name a few.
>
> In addition to the initial contribution of $10,000 made by the American Hospital Association, the American Red Cross has also contributed $10,000 and more than $16,000 has been received as voluntary contributions from more than five hundred schools of nursing. These funds, for the most part, have been allocated to the Advertising Council for newspaper advertising mats, posters, car cards, billboard posters and other promotional material. A series of newsletters is being distributed, approximately weekly, to all schools of nursing and to local student nurse recruitment committees.
>
> An important part of the national backdrop of publicity has been the allocation of seven weeks of national radio network time on behalf of the program. The Advertising Council Radio Division estimates that during the first fifteen weeks of 1947 more than 527,295,000 listener-impressions have resulted. During the month of July 45,000 window display posters, 70,000 street car and bus posters and 2,000 billboard posters have been distributed by the Advertising Council throughout the country. This, together with a week of national radio network time (which began Monday, July 28) climaxed the national publicity program for the campaign.
>
> Preliminary surveys among the schools of nursing indicate that, in some areas, a marked degree of optimism prevails regarding the likelihood of obtaining desired fall class quotas. In other areas, however, the situation does not look too promising.
>
> The 1947 Student Nurse Recruitment Committee, of which Dr. Arestad is a member, expressed the opinion at its recent meeting that an effort should be made to secure additional and more active support from the American Medical Association and particularly from its local medical societies. In the last analysis the success of the program rests primarily with the initiation and active development of local student nurse recruitment programs. One of the main objectives of the committee has been to stimulate and assist the further development of such programs. As you well know, the members of the medical profession have a vital interest in seeing that the need for student nurses is filled. The shortage of professional nurses affects the physician in two ways: (1) lack of graduate nurses in hospitals has forced hospitals to close beds which are greatly in demand by physicians for their patients, and (2) physicians have been unable to obtain the number of professionally trained nurses desired for employment in their offices.
>
> Therefore, I would like to suggest that you consider the following as an important contribution the American Medical Association may make to 1947 Student Nurse Recruitment:
>
> 1. Through THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, continue to call the attention of your membership to the interest they have in assisting in obtaining the 45,000 student nurses needed this year.
> 2. Urge local medical society officers and members to fully investigate the situation locally, determine the various ways in which they may most effectively participate in local programs, and point out specific activities they may carry out which will directly aid the program. (These may take the form of distributing information and material to young women whom they believe are likely candidates for nursing school; active participation in recruitment programs; underwriting of scholarships for young women financially unable to pay for the costs of nursing education and who are otherwise qualified; conveying to the public whenever and wherever possible, the opportunities and advantages which a career in nursing offers.)

Dr. Hullerman, in attendance in place of Mr. Davis, spoke as follows:

> The Student Nurse Recruitment Committee has recommended that this recruitment be continued in 1948 on somewhat the same pattern, from an organizational standpoint, as obtained this year. The initial steps have been taken; also, the matter of necessary financing has been investigated. The 1947 program had much more substance than the 1946 one had. The Committee is rather hopeful that the enrolment this year is going to be large. Preliminary figures indicate that 80 to 85 per cent of the number of students desired have been obtained.
>
> The Recruitment Committee has expressed the opinion that the local physician can either set or alter the decision of a girl to enter nursing. In 1948, if the program continues to the extent that specific action can be taken so that the recruitment program can be brought to the attention of the physicians themselves, their influence would be most helpful.

In reply to a question as to what had been or is obstructing recruitment, Dr. Hullerman stated that many persons complain of unfavorable hours and, often, circumstances which they claim are inseparable from the profession of nursing, and there is prevalent a great deal of misinformation. However, he continued, the recent survey of the U. S. Department of Labor presents quite a favorable picture of the profession, and many hospitals are offering positions that are comparable with other positions available to women.

PRACTICAL NURSES

Father Schwitalla presented the following statement concerning the education, necessity for and supply of practical nurses:

> I felt at first that this was a rather minor matter, but when I went over some of the papers and books that have been published, I discovered that a great deal has been written, that there has been much discussion and that it concerns a large number of persons. The schools of nursing seem to be fearful as to what is happening, anticipating the disappearance of the so-called basic professional nurse who has her three years of training·

> they do not welcome a diffusion of professional attitudes, such as certainly would be the case if a great deal of the nursing were to be done by practical nurses. Another factor in the picture is that universities with a policy of issuing nursing certificates are preponderantly opposed to the issuance of anything lower than a degree. Hospitals in some localities are greatly concerned in the development of the practical nurse. Strange to say, those hospitals that seemed most in favor of the volunteer help during the war and shortly after seem now to be least in favor of the practical nurse. It seems to be the concensus of the hospitals that the practical nurse of today should be used to do the things which the Nurse's Aide did during the war. I find a growing lack of interest in the practical nurse today, even in those hospitals that had favorable experience with the volunteers. Some of this lack of interest may be due to a lack of understanding as to where the lines will be drawn. There are fifty schools for the training of practical nurses; only a very few require one year of high school education and only one requires two years.
>
> It seems to me that those who are guiding the future of nursing are inclined to regard the development of more practical nurses as something that is here to stay. I am most concerned as to what the fate of the patient will be if any appreciable number of practical nurses are used either in the hospitals or in private practice.

During the discussion Dr. Fischelis asked how many states license practical nurses and was informed that there is some reference to them in the laws of nineteen states and the territory of Hawaii. He thought that when the practical nurses see that they have some status in a state and can obtain licenses, they are likely to think they are as good as registered nurses. Miss Switzer noted that there is much variety in the requirements of the states and the schools, that Massachusetts has had a practical nurse-training program the graduates of which were substantial people in what they could do and the responsibilities they could take. Father Schwitalla said that the woman who heads the organization of practical nurses seems to have a definite conviction that unless we do have practical nurses we are not going to be able to provide a healthy American people, and that in one of her recent papers she stated that there is a place for this kind of woman in health care quite distinct from the place of the graduate nurse. He mentioned an interesting expression in a recent article to the effect that a graduate nurse should be looked on as an Army officer and the practical nurse as one of the rank and file, the implication being that we should have very many more practical nurses and few graduate nurses.

AMERICAN MEDICAL ASSOCIATION COMMITTEE TO STUDY NURSING PROBLEMS

The Chairman informed the Joint Committee that pursuant to action by the American Medical Association House of Delegates in June a Committee to Study Nursing Problems had been appointed by the President of the Association with Dr. Thomas P. Murdock of Connecticut as chairman, and that while the new committee has not yet had a meeting its members have been studying available material and literature. He read the following excerpts from a letter received from Dr. Murdock:

> As yet the Committee to Study Nursing Problems has not met due to vacations and previous commitments. So far we have reviewed all of the nursing journals having to do with this problem. We have the statements made by Dr. Frank Lahey and Dr. Naffziger. We have reviewed the report of the American Surgical Society and have reviewed all of the literature gathered by Dr. MacEachern from the American College of Surgeons. We have reviewed the study that was made for the nurses by the U. S. Department of Labor. We have had correspondence with many of the leaders of nursing in America. We have been in contact with Mr. Frederick Ayer of Boston, who seems to know a good deal about this situation as a layman. Dr. Frank Dickinson is working on retirement studies. We have purposely postponed meeting with the American Hospital Association group and the nursing groups until we are in better position to discuss this problem.
>
> It looks like an enormous job, and I think that probably we will only report progress at the meeting in Cleveland but that we will have a full report for the annual meeting in Chicago.

NAVY EDUCATIONAL PROGRAM

Captain Eaton informed the Joint Committee regarding the program of the Navy in medical education as follows:

> The Navy's program in medical education is now well established. Continual improvement is being made in the hospital provisions; libraries are being established and elaborated, and the eight specifically named hospitals to carry on a major portion of the program are now functioning. We are sending men into the civilian hospitals for training courses, some of which cover many months.
>
> The entrance of new officers into the Navy Medical Corps is not encouraging. The following memorandum has the approval of those in the Bureau of Medicine and Surgery who have to do with this program:
>
>> The legal office of the Surgeon General has been asked to consider and make recommendations concerning scholarships to medical students with the idea in mind of having a reliable and constant source of medical officers for the Medical Corps of the Navy. It is believed that if legislation is introduced it will apply in the case of the Armed Services generally and possibly the Public Health Service, although that will of course be a matter for the Congress to determine.
>>
>> It is considered that the granting of scholarships to worthy students would to a measure aid in alleviating the present shortage of physicians, not only in the Armed Services but also in civilian life. In addition, it would enable capable and ambitious young men, who otherwise could not do so because of lack of money, to pursue a medical education.
>>
>> Such a program would depend on the cooperation and support of civilian medical agencies and medical schools and it is desired to ascertain their reaction, not only to the desirability of the idea, but also as to the practical details involved. Should opportunity present itself, it is requested that you present the matter informally to the planning board of the American Medical Association or the Emergency Medical Service Committee of the American Medical Association.

Miss Switzer asked if it was implied that a man accepting the terms outlined committed himself to service for a certain length of time, and Captain Eaton answered in the affirmative. Miss Switzer said that one or two states are attempting to finance medical students in that way with the provision that they practice in the state for a stated period.

RURAL MEDICAL SERVICE

Dr. Mulholland presented the following information with respect to activities of the Committee on Rural Medical Service:

> The plans for the next National Conference on Rural Health to be held in Chicago in February 1948 are well under way. The main theme probably will be Rural Health and the Child. The Committee on Rural Medical Service is cooperating with the Council on Medical Service in connection with its regional meeting to be held in New Orleans this fall. The Committee feels that it is of great importance to stimulate members of local and state medical societies to consider the problems of rural medical service. It is sometimes difficult to get the state and local societies to do very much. It is planned that each regional chairman of our Committee will visit each state medical society meeting in his district and ask for support.
>
> Material is being sent to the various farm journals from the American Medical Association in the hope that those publications will print it. Representatives of our Committee met recently with the Women's Committee of the National Cooperative Milk Producers Federation and discussed ways and means of improving the health of persons in rural areas.

PROGRESS REPORT ON AMERICAN RED CROSS BLOOD PROGRAM

Dr. Draper offered the following statement concerning the Red Cross Blood Program:

> The program of the Red Cross for the collection of blood was approved by the House of Delegates of the American Medical Association at its annual session this year. The Board of Governors of the Red Cross approved the program at a recent meeting in Cleveland. Vice Admiral Ross T. McIntire, former Surgeon General of the U. S. Navy, has accepted the directorship of the program and is now engaged in organizing the work. It is hoped that by Christmas this year there will be at least one blood donor center set up in each of the five Red Cross areas. Many applications for the establishment of blood donor centers have been received, and these applications are given very careful consideration with respect to facilities offered.
>
> The principal features of the program are: (1) collection; (2) processing—breaking it down into its derivatives, packaging and storing; (3) distribution; (4) continuation of research; (5) maintenance of the highest standards in collection, processing and distribution, and (6) educational and promotional activities which are extremely necessary in getting persons to donate blood. The budget for the blood program has been set up, and several key persons have been employed. Admiral McIntire and I are determined that this program shall be conducted only with the hearty approval of the medical societies and health authorities in the areas where it is established.

COURSES IN MEDICAL ASPECTS OF ATOMIC ENERGY

General Armstrong asked how many medical schools have recognized the impact of public opinion to the extent that they have instituted courses in the medical aspects of the atom. Father Schwitalla said he knew of none in the undergraduate classes, and Dr. Mulholland stated that his school at Charlottesville, Va., had sent five of its medical students to Oak Ridge, Tenn., for study and observation. General Armstrong knew of two schools that have set up such courses and supposed that they are the graduate schools. It was his opinion that the military services are recognizing the importance of every medical officer knowing something about the subject, and he wondered how soon a similar recognition on the part of civilian physicians might be expected.

TIME AND PLACE OF NEXT MEETING

It was decided to hold the next meeting at American Medical Association Headquarters in Chicago on Saturday, Dec. 6, 1947.

GOVERNMENT SERVICES

ARMY

NEW CHIEF OF ARMY NURSES

The Surgeon General's Office announced October 1 the appointment of Col. Mary G. Phillips as chief of the Army Nurse Corps to succeed Col. Florence A. Blanchfield, who has retired after nearly thirty years of service. Colonel Phillips is a native of Wisconsin. She has been in the Army Nurse Corps since 1939 and during the recent war was deputy superintendent and later was director of nurses in the Pacific theater of operations.

NURSES AND DIETITIANS COMMISSIONED

The President tendered recess appointments in the Regular Army in October to one hundred and fifty-three officers and former officers of the Army Nurse Corps, thirty-one hospital dietitians, nineteen physical therapeutists and three occupational therapeutists, many of whom had served during World War II. These appointments are the first in the integration program resulting from the establishment by the last Congress of the Army Nurse Corps and the Women's Specialist Corps as part of the Regular Army. This is the first time that commissioned officer status has been given to occupational therapeutists. Among the nineteen physical therapeutists commissioned was Major Emma E. Vogel of Mankato, Minn., who has continuously served the medical department of the Army for twenty-eight years and who during World War II was director of physical therapeutists in the Surgeon General's Office.

DEPENDENTS OFFERED AIR TRAVEL TO PACIFIC AREA

A limited number of dependents of the Army and Air Force enlisted and officer personnel stationed in the Pacific area will be flown to their destinations in four-engine planes of the U. S. Air Transport Command, which will carry special equipment for the preparation of baby foods en route, since infants aged 6 months or over may now be flown. All dependents may be given the opportunity to indicate preference for air or surface travel. This arrangement, the War Department announced, has been made to avoid delay during the reconversion of many Army transport vessels for peacetime use.

ARMY AWARDS AND COMMENDATIONS

Lieut. Col. Philip S. Foisie

The Bronze Star Medal has been awarded to Lieut. Col. Philip S. Foisie (then Major), M. C., U. S. A., of Boston. The citation read as follows: For meritorious service in connection with military operations as Assistant Chief of Surgical Service, 7th General Hospital, from Dec. 20, 1943 to July 19, 1944. On two occasions Major Foisie was charged with establishing and opening hospital plants and placed in command of hospital detachments. Although inexperienced in the administrative and executive duties required, he demonstrated such qualities of adaptability, leadership, wisdom and devotion to duty that these missions were performed with complete success. The outstanding accomplishments of Major Foisie reflect great credit on himself and the armed forces of the United States. He was also awarded the Legion of Merit for outstanding service as chief, Surgical Service, 129th General Hospital in the ETO from July 20, 1944 to June 11, 1945. Dr. Foisie graduated from Harvard Medical School in 1924 and entered the military service June 19, 1943.

PERSONALS

Major Gen. Merritte W. Ireland, retired, formerly Surgeon General of the Army, has resigned as president of the Army Mutual Aid Association after eighteen years of service and as a director of that organization for thirty-two years. He has been succeeded on the board by the present Surgeon General, Major Gen. Raymond A. Bliss.

George W. Hervey, Ph.D., former chief administrative analyst for the director of plans of the Surgeon General's Office, has been named head of the statistical division of the American Red Cross National Blood Program and will establish methods for collecting and analyzing the data related to a program which will undertake, under the general direction of Ross T. McIntire, former Surgeon General of the Navy, to provide blood and blood derivatives without charge throughout the nation. Dr. Hervey is a veteran of both World Wars, having been released as a colonel in 1946. He is a graduate from Rutgers, receiving his M.A. degree from Missouri and his Ph.D. degree from Harvard.

NAVY

NAVY DAY

The twenty-sixth observance of Navy Day, October 27, was celebrated at all naval medical establishments. At the Medical Center, Bethesda, Md., there was an "open house" to the public, and staff members conducted visitors through the Center. The Surgeon General, Rear Admiral C. A. Swanson, was the principal speaker in the evening.

FLIGHT SURGEONS GRADUATE

On Sept. 12, 1947 eighteen naval medical officers received their designations as flight surgeons at the Naval Air Station, Pensacola, Fla., after having completed twelve weeks of classroom and laboratory work followed by seven weeks of flight training and ground school. The class convened on May 8, with thirty-three officer members. Fifteen were graduated as aviation medical examiners at the end of twelve weeks of instruction, while the remaining members continued in active flight training for seven more weeks. Capt. William Sinton, U. S. N., commanding officer of the Naval Air Station, gave the commencement address.

Capt. Bruce V. Leamer (MC) was relieved as officer in charge of the School of Aviation Medicine and Research by Capt. Wilbur E. Kellum (MC), Sept. 12, 1947. Other recent additions to the staff of the school are Comdr. Charles F. Gell (MC), as executive assistant to the officer in charge with additional teaching duties in physiology, and Lieut. Comdr. Philip B. Phillips (MC), as head of the Neuropsychiatry Department.

PERSONALS

Rear Admiral T. C. Anderson (MC), commandant, Naval Medical Center, Bethesda, Md., recently addressed the University of Michigan Medical School, Ann Arbor, at their annual convocation on "Progress of Medical Education."

Rear Admiral Lamont Pugh (MC), Assistant Chief, Bureau of Medicine and Surgery, was guest speaker at the first regular monthly meeting at the Naval Hospital, Philadelphia, October 24.

The Swedish government recently appointed Capt. Erik G. Hakansson (MC), U.S.N., commanding officer, Naval Medical Research Institute, Bethesda, Md., a Knight of the Royal Order of Vasa, first class, in recognition of his services during the tenth International Congress of Military Medicine and Pharmacy in 1939. The award was presented by Rear Admiral T. C. Anderson, commandant, National Naval Medical Center, Bethesda, Md.

Dr. Kronfeld to Give the Schoenberg Lecture.—The Mark J. Schoenberg Memorial Lectureship has been established in honor of Dr. Schoenberg's interest and original work in the control of glaucoma under the joint sponsorship of the New York Society for Clinical Ophthalmology, of which he was founder and president, and the National Society for the Prevention of Blindness, which he served as chairman of the committee on glaucoma. The first lecture will be held at the New York Academy of Medicine December 1 at 8 p. m., with Dr. Peter C. Kronfeld, Chicago, speaking on "The Canal of Schlemm." For many years Dr. Schoenberg was instructor in ophthalmology at Columbia University College of Physicians and Surgeons, and chief in the glaucoma clinic, Herman Knapp Memorial Hospital. He died Feb. 15, 1945.

OKLAHOMA

Hospital News.—A gift of $300,000 from the Price Foundation of Greenwich, Conn., to the Benedictine Sisters' charity hospital at Guthrie was announced at recent ceremonies attending the laying of the cornerstone.

Outing at Lake Murray.—The Carter County Medical Association, under the direction of Dr. James M. Gordon, Ardmore, president, met at Lake Murray early in October. After dinner Dr. George Garrison, professor of pediatrics, University of Oklahoma School of Medicine, Oklahoma City, spoke on diseases and nutrition of the newborn. A sight-seeing tour in motor boats along the hundred and thirty-five mile shore line of Lake Murray preceded the feast.

WISCONSIN

First Gundersen Lecture.—The first in a series of lectures, made possible through the generosity of the Gundersen Clinic in honor of the late Dr. Adolf Gundersen of LaCrosse, was given at the University of Wisconsin October 15. Dr. Erik Ask-Upmark spoke on "The Spleen and Some of Its Disorders." Dr. Gundersen was one of the pioneer physicians and surgeons in Wisconsin. He served the state university as one of its regents.

Form Rheumatism Association.—Physicians from various parts of the state met September 15 and formed the Wisconsin Rheumatism Association (1) to cooperate with the American Rheumatism Association, (2) to sponsor and assist in a state program for the prevention of rheumatism and for improved care and rehabilitation of patients with rheumatism, (3) to promote the education of physicians regarding the prevention and treatment of rheumatism, (4) to accumulate data on the rheumatic diseases and (5) to receive and expend money to foster the purposes of the association. Dr. Milton C. Borman, Milwaukee, was elected president, and Dr. Campbell C. Edmondson, Waukesha, secretary-treasurer.

GENERAL

Social Work Fellowships.—A limited number of $2,400 fellowships are available to experienced social workers who have a masters degree for advanced training in teaching and administrative responsibilities leading to a certificate for advanced psychiatric social work. The fellowships are offered by the University of Pittsburgh, the School of Social Work, in cooperation with the Veterans Administration Hospital at Topeka, Kan., and the Menninger Foundation Field Training Center for Psychiatric Social Work.

Shoes for Mismated Feet.—The Benefit Shoe Foundation, a nonprofit corporation offering single shoes and odd pairs at cost for amputees, paraplegics and others with mismated feet, began operation October 14 at the Bristol Manufacturing Corporation, Bristol, R. I. The foundation will not attempt to provide orthopedic or special shoes of any kind. It will simply make available regular standard make shoes singly or in mismated pairs. The foundation was started at the suggestion of the National Foundation for Infantile Paralysis.

Women Doctors Designate Blackwell Day.—The one-hundredth anniversary of the entrance of the first woman into medical school, November 7, has been designated as Blackwell Day by the Medical Women's Library Committee of the American Medical Women's Association, in honor of Dr. Elizabeth Blackwell, the first woman in the world to receive an M.D. degree. The association is raising a fund of $500,000 with which to erect a Medical Women's Library and Blackwell Memorial Hall on the campus of the Woman's Medical College, Philadelphia, which has given the site and vouched for the upkeep. The library is also seeking books written in any language by or about women in medicine, dentistry or science for the library (The Journal, July 19, p. 1035).

Southern Association to Meet in Baltimore.—The Southern Medical Association has accepted the invitation of the Baltimore City Medical Society to hold its annual meeting in Baltimore November 24-26. The entire scientific program will be presented by faculty members of the Johns Hopkins Medical School and the University of Maryland School of Medicine and College of Physicians and Surgeons, as well as by prominent members of the profession in Baltimore. A general public session will be held Monday evening. The twenty-one sections of the association will hold their meetings Tuesday and Wednesday.

Dr. Verhoeff Awarded Dana Medal.—The National Society for the Prevention of Blindness has awarded the Leslie Dana Medal this year to Dr. Frederick H. Verhoeff, Boston, for outstanding achievement in the prevention of blindness and the conservation of vision. The medal was presented during the faculty luncheon of the American Academy of Ophthalmology and Otolaryngology in Chicago, October 16. Dr. Verhoeff is professor of ophthalmic research emeritus at Harvard Medical School and consulting chief of ophthalmology, Massachusetts Eye and Ear Infirmary, Boston. He graduated from Johns Hopkins School of Medicine in 1899; he served as a major in the medical corps of the U. S. Army in 1918, as president of both the American Ophthalmological Society and the New England Ophthalmological Society and as chairman of the Section on Ophthalmology of the American Medical Association. Dr. Verhoeff was selected for the Dana Medal by the St. Louis Society for the Blind, through which it is offered by Mr. Leslie Dana, St. Louis, on recommendation of the Association for Research in Ophthalmology.

Research on Orthopedic Appliances.—A multiple research fellowship on orthopedic appliances has been established at the Mellon Institute, Pittsburgh, by the Sarah Mellon Scaife Foundation of Pittsburgh. Under the guidance of orthopedists and with the cooperation of leading organizations in the field and manufacturers of orthopedic appliances, the fellowship will accord particular attention to problems of mechanical design, improvements in materials of construction and methods of fitting braces and other orthopedic devices. John L. Young, Ph.D., a research specialist in metallurgy and mechanical engineering who has been active on the investigatory staff of Mellon Institute since 1928, heads the program as senior fellow and assistant director. Eugene F. Murphy, M.E., staff engineer, committee on artificial limbs, National Research Council, Washington, D.C., will serve as advisory fellow. Several research assistants will complete the initial personnel of the fellowship. The medical advisory committee of the fellowship is under the chairmanship of Dr. Paul B. Steele, professor of orthopedic surgery, University of Pittsburgh School of Medicine. Other members of the committee are Drs. John A. Heberling and Carl C. Yount.

International Cancer Research Commission.—At the Fourth International Cancer Research Congress, in St. Louis, September 2-7, an International Cancer Research Commission was established as an almost autonomous division of the Union Internationale Contre le Cancer by the thirty-nine nations represented. It is expected that the number of member nations soon will be increased. Each nation, regardless of size, has but one representative on the commission, and all representatives have equal voting power. Meetings are to be held annually, never consecutively in the same country. The following executive committee of the International Commission was elected, each member having an alternate to act for him if necessary: Ignacio Millan, Mexico, chairman, with F. Leborgne, Uruguay, alternate; Edmund V. Cowdry, United States, with William U. Gardner, United States, alternate; V. R. Khanolkar, India, with Tu-Shan Yung, China, alternate; J. H. Maisin, Belgium, with A. Lacassagne, France, alternate, and A. Haddow, England, with J. Engelbreth-Holm, Denmark, alternate. The purpose of this commission is to promote international cooperation in cancer research. This newly created International Cancer Research Commission does not in any way replace the much larger International Cancer Research Congress, which will continue to meet in different parts of the world at intervals of about three years.

Nobel Prize Winners in Medicine.—The 1947 Nobel Prize in physiology and medicine has been awarded to Dr. Carl F. Cori and his wife, Dr. Gerty Cori, of St. Louis, and Dr. Bernardo A. Houssay of Buenos Aires, Argentina. Half of the $48,580 cash prize will go to Dr. Houssay, and the Coris will share the other half. Dr. Cori and his wife were given the award for their discovery of the process in the catalytic metabolism [illegible] en. The enzyme phosphorylase, which they isolate[illegible] e c [illegible] al starch into sugar in the bod[illegible] ssa [illegible] his discovery of the significance of the hormone produced by the frontal lobe of the hypophysis and its importance in the distribution of glycogen in the body and in the control of diabetes. Dr. Cori is head of the biochemistry department and his wife is an associate professor of research in biological chemistry at Washington University School of Medicine, St. Louis, where they have been on the faculty since 1931. They graduated in medicine in Prague in 1920, came to this country in 1922 and became naturalized citizens in 1928. Dr. Houssay received his M.D. degree at the Colegio Britanico and Faculties of Pharmacy and Medicine, Buenos Aires, 1904. He was professor of physiology at the University of Buenos Aires, 1919 to 1943, and with the assistance of the Rockefeller Foundation organized the Instituto de Biologica y Medicina Experimental in 1944. He has been a frequent lecturer in the United States.

Prevalence of Poliomyelitis.—Reports of cases of poliomyelitis for the periods indicated have been received from the division of public health methods, U S Public Health Service:

Division and State	Week Ended Oct. 18, 1947	Week Ended Oct. 19, 1946	Median, 1942-1946	Total to Oct. 18, 1947	Total to Oct. 19, 1946	Total * March 16-Oct. 18, 1947	Total * March 17-Oct. 19, 1946
New England:							
Maine	0	5	1	37	31	34	31
New Hampshire	0	1	1	22	137	18	136
Vermont	0	15	3	28	52	20	48
Massachusetts	24	29	27	323	268	316	264
Rhode Island	1	6	1	135	81	134	81
Connecticut	2	14	12	129	96	126	88
Middle Atlantic:							
New York	56	63	63	1,014	1,165	978	1,132
New Jersey	7	12	12	249	213	243	207
Pennsylvania	28	5	7	400	222	386	210
East North Central:							
Ohio	78	32	23	1,197	614	1,187	599
Indiana	6	29	7	208	335	192	330
Illinois	25	99	42	755	2,159	733	2,151
Michigan	23	71	14	554	840	530	832
Wisconsin	7	61	16	185	1,072	161	1,059
West North Central:							
Minnesota	5	64	14	200	2,658	187	2,657
Iowa	6	25	13	148	500	140	491
Missouri	3	57	13	109	1,110	99	1,103
North Dakota	0	24	1	68	439	63	439
South Dakota	10	11	0	22	355	20	355
Nebraska	6	37	5	184	540	177	539
Kansas	2	70	14	86	916	68	912
South Atlantic:							
Delaware	1	2	2	127	28	127	28
Maryland	7	5	5	92	83	86	81
District of Columbia	1	1	1	19	24	17	23
Virginia	6	5	5	144	100	134	94
West Virginia	11	3	3	117	66	113	63
North Carolina	12	13	11	193†	117	178†	110
South Carolina	3	1	1	31	20	30	17
Georgia	4	11	6	71	147	64	139
Florida	13	9	1	98	532	73	483
East South Central:							
Kentucky	5	1	3	90	100	89	97
Tennessee	8	8	3	122	155	110	146
Alabama	0	7	2	46	365	33	362
Mississippi	2	8	3	45	279	28	262
West South Central:							
Arkansas	1	13	2	73	351	62	339
Louisiana	1	7	3	45	334	27	315
Oklahoma	2	16	9	50†	347	39†	341
Texas	4	18	16	159	864	134	836
Mountain:							
Montana	0	2	1	24	116	22	100
Idaho	13	1	1	198†	36	188†	36
Wyoming	0	0	0	16	112	13	111
Colorado	2	15	3	55	870	50	869
New Mexico	0	4	3	32	155	29	154
Arizona	1	1	1	29	104	26	101
Utah	1	5	5	11	123	6	117
Nevada	0	0	0	1	3	1	3
Pacific:							
Washington	7	33	15	125	429	117	396
Oregon	4	6	6	75	140	70	136
California	17	51	46	722	1,859	573	1,772
Total	415	976	...	8,863†	21,662†	8,251†	21,195
Median, 1942-1946	...	....	618	11,463		11,066	

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* Last two columns show reported incidence since approximate seasonal low week (week ended between March 15 and 21).

† Figures changed by corrected reports.

Analysis of the Nursing Crisis.—The American Nurses' Association, 1790 Broadway, New York, has analyzed the underlying problems in the nursing crisis, pointing out that the demand for nurses has skyrocketed in the last few years and that several factors deter young women from joining the profession and discourage many already registered from continuing. Long hours, split shifts, lack of retirement provisions and minimum salary increases characterize the nurses' working conditions. Their responsibilities have increased, thus requiring higher standards of education and performance. The U. S. Department of Labor statistics for October 1946 gave the average salaries for nurses in all fields, with the majority providing their own living quarters, as $170 to $175 per month. The majority of nurses work forty-eight hours a week, and many work fifty-four or more hours. Twenty-six states, Hawaii and Puerto Rico have laws requiring licensure of all who nurse for hire. Without laws in all states the public is at the mercy of many unqualified persons. Increased demands for nursing service arise from increased public interest in health, the development of hospital plans, increased hospital construction and federal social legislation. The American Nurses' Association, in cooperation with state nurses' associations, has organized a counseling and placement service available without charge to nurses and employers to promote a more equitable distribution of nursing service. The association is cooperating with committees from other groups to assist in meeting the nursing problem.

LATIN AMERICA

Medical Election.—The Sociedate Médico-Cirúgica do Pará, Brazil, elected the following officers for 1947 to 1949: Drs. Luiz Araujo, president; Quaresma Gama, vice president, and Afonso Rodrigues Filho, secretary. Other officers are Drs. Orlando Bordalo, Oscar Miranda, Avertano Rocha, Otávio Lobo, Rosário Conte, Orion Loureiro and Raimundo Chaves.

Pan American Congress on Ophthalmology.—The Third Pan American Congress on Ophthalmology will meet at Havana, Jan. 4-10, 1948, to which the governments of all Pan American countries have been officially invited by the government of Cuba. Drs. Duke, Elder and Cass of England; Fuchs, Lindner, de Viena, Bailliart, Velter, Dollfus and Hartman of France and Verhagen and Thiel of Germany will be guests of honor. There will be an exhibit of amateur art by ophthalmologists, and space in the exhibit should be requested before November 15. Books, pamphlets and other publications of American ophthalmologists can be exhibited by request in the exhibits of ophthalmologic literature or distributed during the Congress. On the social program there will be a "Pan American evening" in which ladies and gentlemen will wear typical regional dress. Information may be obtained from Dr. Miguel A. Branly, General Secretary, Edificio Bacardi 70, Piso, Havana, Cuba.

FOREIGN

International Congress on Biology.—The first International Congress on Clinical Biology will be held in Paris, France, November 20-22 with Professor Polonovski as chairman and Professors Justin Besançon and Fleury as vice chairmen. The opening session will be devoted to reports on syphilis, anemias, new results of examination of the cerebrospinal fluid and new observations in gastric physiology and pathology. During the second day, reports will be presented on methods of determination of hemoglobin, blood proteins, hepatic insufficiency and the dosage of hormones. The final session will be on new methods of demonstration of Löffler's bacillus, exploration of cytohormones in sterility, diagnosis of bronchial tumors and the clinical importance of 17-ketosteroids.

Marriages

FRANK J. KROBOTH Jr. to Miss Teresa Musolino, both of Binghamton, N. Y., in Canandaigua, July 5.

JOHN F. MCCABE, Hartsdale, N. Y., to Miss Margaret Ellen Bradley of Glenside, Pa., June 24.

PHILLIP PENNINGTON, Bloomington, Ind., to Miss Barbara Boyer of Indianapolis, August 29.

ROBERT CHARLES HAILE to Miss Lucele Clare Brady, both of Washington, D. C., September 6.

ROBERT PAGE BOUDREAU, Syracuse, N. Y., to Miss Elizabeth Davis of Geneva, Ill., July 2.

THEODORE KATZ, Linden, N. J., to Miss Ilse Steinberger of New York, September 7.

FRANK L. KARP, Brooklyn, to Miss Thelma Rita Goldman of New York, October 12.

MEYER DEWITT SCHNALL to Miss Ruth Vivian Renick, both of New York, June 29.

JAMES J. SRAIL to Miss Bernice Belden, both of Moline, Ill., August 3.

RALPH J. KAHANA to Dr. Eda Malisoff, both of New York, July 28.

Deaths

Ewen Murchison MacEwen ⊕ Iowa City; born in Greenwich, Prince Edward Island, Canada, Sept. 16, 1885; State University of Iowa College of Medicine, Iowa City, 1912; dean and professor of anatomy at his alma mater, where he joined the faculty as an instructor in anatomy in 1914, later serving as assistant and associate professor of anatomy and head of the department; president of the Association of American Medical Colleges in 1943, and in 1944 chairman of the executive council; member of the American Association for the Advancement of Science, American Association of Physical Anthropologists and the American Association of Anatomists; served as consultant for the Veterans Hospital; president of the First Federal Loan and Investment Company and vice president of the Iowa State Bank and Trust Company; died in the University Hospital September 2, aged 61, of coronary occlusion.

Charles Porter Small ⊕ Chicago; born in Bangor, Maine, Nov. 16, 1863; Medical School of Maine, Portland, 1889; an Affiliate Fellow of the American Medical Association; past president of the Chicago Ophthalmological Society; formerly physician to the University of Chicago, instructor in ophthalmology at the Chicago Policlinic and clinical associate in the eye department at Rush Medical College; served as a captain in charge of the aviation examination unit, Central Department of the U. S. Army during World War I; secretary and director of the Ophthalmic Publishing Company; at one time contributor to the American Encyclopedia of Ophthalmology and others; died in Princeton, Ill., September 25, aged 83, of hypertensive heart disease.

Vaclav Horace Podstata ⊕ San Francisco; born April 24, 1870; Chicago Homeopathic Medical College, 1895; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1900; associate clinical professor of psychiatry, emeritus, at the University of California Medical School; specialist certified by the American Board of Psychiatry and Neurology, Inc.; member of the American Psychiatric Association; formerly physician in charge of Oakwoods Sanitarium in Lake Geneva, Wis., superintendent of the Elgin (Ill.) State Hospital and physician in charge of the Livermore (Calif.) Sanitarium; for many years psychiatrist for the child welfare department of the schools of Berkeley; died August 15, aged 67, of pneumonia.

William Neer, Paterson, N. J.; born in Paterson, Aug. 22, 1866; College of Physicians and Surgeons, medical department of Columbia College, New York, 1891; fellow of the American College of Surgeons; formerly health officer; examiner for the draft board during World War I; part-time medical officer for the Wright Aeronautical Corporation during World War II; past president of the Passaic County Medical Society; for many years on the staff of St. Joseph's Hospital; died in Point Pleasant Hospital in Point Pleasant August 7, aged 81, of uremia, following fracture of the neck of the femur received in a fall from a bicycle.

Stephen L. Walczak ⊕ Buffalo; born in Buffalo, Nov. 30, 1897; University of Buffalo School of Medicine, 1921; specialist certified by the American Board of Surgery; fellow of the American College of Surgeons; associate in surgery at his alma mater, 1942-1943; formerly member of the city board of health; served during World War I; chairman of the Selective Service Board of Appeals number 23 during World War II; consulting surgeon, J. N. Adam Memorial Hospital, Perrysburg; affiliated with the Millard Fillmore, Mercy and Edward J. Meyer Memorial hospitals; died August 11, aged 49, of coronary heart disease.

William Albert Taylor ⊕ Ellensburg, Wash.; born in Toronto, Canada, Nov. 21, 1881; University of Toronto Faculty of Medicine, Toronto, 1907; specialist certified by the American Board of Surgery; member of the Western Surgical Association, Pacific Coast Surgical Association, North Pacific Surgical Association and the American Association for the Surgery of Trauma; fellow of the American College of Surgeons; affiliated with the Ellensburg General Hospital; surgeon for the Chicago, Milwaukee and St. Paul Railway and the Pacific Railway; died in Boston June 17, aged 65, of cerebral hemorrhage.

Lindley Dobson, Presque Isle, Maine; born in 1864; Bellevue Hospital Medical College, New York, 1891; member of the founders group of the American Board of Surgery; fellow of the American College of Surgeons; member of the American Medical Association and the New England Surgical Society; in 1941 received a "fifty year" medal of the type presented to members who have practiced for half a century by the Maine Medical Association; affiliated with the Presque Isle General Hospital; died July 4, aged 82, of carcinoma of the pancreas.

Mark Heiman ⊕ Syracuse, N. Y.; Syracuse University College of Medicine, 1897; formerly demonstrator of anatomy at his alma mater; member of the American Academy of Dermatology and Syphilology, of which he had been president; past president of the Syracuse Academy of Medicine; past chairman of the section on dermatology and syphilology of the Medical Society of the State of New York; on the staffs of St. Joseph Hospital and St. Mary's Maternity Hospital and Infants Asylum; died July 2, aged 71, of hypertensive heart disease.

Joseph Richard Adams, El Dorado, Kan.; University of Louisville (Ky.) Medical Department, 1901; served during World War I; died in Wichita July 21, aged 66.

John T. Anglin, Dover, Okla.; University of the South Medical Department, Sewanee, Tenn., 1900; served as president of the Kingfisher County Medical Society; died in the General Hospital, Enid, July 4, aged 70, of arteriosclerosis.

Harriet D. Covert Battles, St. Petersburg, Fla.; Toledo Medical College, 1900; died May 4, aged 87, of acute dilatation of the heart.

Charles Franklin Kingsbury Bean ⊕ Medford, Mass.; Harvard Medical School, Boston, 1912; past president of the Medford Medical Society and the Rotary Club; for many years affiliated with Lawrence Memorial Hospital; died July 23, aged 61, of hypertensive heart disease.

Norbert George Benesh, Minneapolis; University of Nebraska College of Medicine, Omaha, 1931; member of the American Medical Association; on the staff of the Lutheran Deaconess Home and Hospital; died June 28, aged 39, of coronary disease.

Harry Applebee Cheney, Campton, N. H.; University of Vermont College of Medicine, Burlington, 1894; member of the American Medical Association; served on the staff of the Sceva Speare Memorial Hospital, where he died July 15, aged 76, of carcinoma of the prostate.

Cyrus Eben Coffee ⊕ St. Louis; St. Louis University School of Medicine, 1911; affiliated with the Christian Hospital; died in the Barnes Hospital August 9, aged 69, of coronary thrombosis.

Victor C. Eddy ⊕ Colby, Kan.; the Hahnemann Medical College and Hospital, Chicago, 1884; served as county health officer; on the staff of St. Thomas Hospital, where he died August 9, aged 85, of pneumonia.

Robert Donald Ferguson ⊕ Ocala, Fla.; Tulane University of Louisiana School of Medicine, New Orleans, 1915; formerly vice president of the Florida Medical Association and member of the committee on venereal disease control; served overseas during World War I; died in the Municipal Hospital, Tampa, July 26, aged 55, of hypertensive heart disease.

Ben Bigelow Fisher, Wild Rose, Wis.; Wisconsin College of Physicians and Surgeons, Milwaukee, 1898; died June 11, aged 77, of cerebral thrombosis and hypertension.

Hugh Vincent Foley, Troy, N. Y.; Albany (N. Y.) Medical College, 1913; member of the American Medical Association; past president of the Rensselaer County Medical Society; died July 16, aged 59, of arteriosclerotic heart disease and nephritis.

Victor Ethel Fox, Tomnolen, Miss.; Memphis (Tenn.) Hospital Medical College, 1913; died August 12, aged 60, of heart disease.

Ephraim D. Friedrichs ⊕ New Orleans; Medical Department of Tulane University of Louisiana, New Orleans, 1900; died June 10, aged 70, of pneumonia following a fractured hip received in an accident.

Max M. Gara, New York Mills, N. Y.; Medizinische Fakultät der Universität, Wien, Austria, 1920; died June 30, aged 55, of coronary infarction and hypertension.

Harry Goldberg, Baltimore; Maryland Medical College, Baltimore, 1907; died June 23, aged 62, of brain tumor.

John Clifford Hancock ⊕ Dubuque, Iowa; Harvard Medical School, Boston, 1898; fellow of the American College of Surgeons; on the staffs of Finley and St. Joseph Mercy hospitals; died June 18, aged 75, of chronic myocarditis.

Benjamin George Haumesser, St. Louis; St. Louis University School of Medicine, 1919; died July 26, aged 53, of cirrhosis of the liver.

John Paul Keating ⊕ Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1927; served during World War I; member of the staffs of Fitzgerald-Mercy Hospital in Darby and Misericordia Hospital; died July 17, aged 50, of acute coronary thrombosis.

Adam J. Knapp, Evansville, Ind.; University of Tennessee Medical Department, Nashville, 1893; died July 9, aged 93, of cerebral hemorrhage.

George Koeppel, Milwaukee; Illinois Medical College, Chicago, 1899; retired public school principal; died July 31, aged 87, of myocardial degeneration.

Harry Marcus Loewenstein ⊕ St. Louis; Washington University School of Medicine, St. Louis, 1902; for many years on the staff of the Missouri Baptist Hospital, where he died August 6, aged 69, of multiple sclerosis.

Lorenzo Peyton McCuistion ⊕ Paris, Texas; Kentucky School of Medicine, Louisville, 1889; fellow of the American College of Surgeons; selected as the 1931 recipient of a certificate of distinction awarded annually by the Winfield F. Brown post of the American Legion at Paris to a distinguished citizen of the town; physician in charge of the Sanitarium of Paris, where he died July 16, aged 77, of cardiac failure and myasthenia gravis.

Earle McCormick McLean ⊕ Bradford, Pa.; Jefferson Medical College of Philadelphia, 1904; past president of the McKean County Medical Society; served during World War I; on the staff of the Bradford Hospital, where he died August 3, aged 66, of sarcoma.

Angeline Martine ⊕ La Jolla, Calif.; Woman's Medical College of Pennsylvania, Philadelphia, 1892; at one time practiced in Utica, N. Y., where she was a member of the board of education and on the staff of St. Luke's Hospital; on the staff of Scripps Memorial Hospital, where she died July 17, aged 80, of cerebral hemorrhage.

Robert J. Nelson, Robersonville, N. C.; Louisville (Ky.) Medical College, 1890; member of the American Medical Association; died July 24, aged 83, of arteriosclerosis and cerebral hemorrhage.

David Joseph O'Connor, Croghan, N. Y.; University of Toronto Faculty of Medicine, Toronto, Canada, 1930; member of the American Medical Association; health officer since 1938; died July 15, aged 41, of an injury to the head received in a fall down the stairs.

John Panos ⊕ Dayton, Ohio; Eclectic Medical College, Cincinnati, 1925; died recently, aged 54.

Jesse Henley Phillips, Montezuma, Iowa; the Hahnemann Medical College and Hospital, Chicago, 1897; member of the American Medical Association; died July 30, aged 96, of senility.

Walter Ashby Plecker, Richmond, Va.; University of Maryland School of Medicine, 1885; member of the American Medical Association; joined the bureau of vital statistics of the state department of health in 1912, serving as director until he resigned in 1946; died in the Hospital Division of the Medical College of Virginia August 2, aged 86, of injuries received when he was struck by an automobile while crossing the street.

George Louis Preston, Canisteo, N. Y.; Eclectic Medical College of the City of New York, 1882; for many years health officer, county coroner and school physician; on the staff of Bethesda Hospital in Hornell; died August 2, aged 86, of acute dilatation of the heart.

Elum M. Russell, Salida, Colo.; Chattanooga (Tenn.) Medical College, 1899; at one time a resident of Gunnison, where he served as physician at Western State College; died August 7, aged 75, of myocarditis.

William Stephen Schuler, Chicago; Jenner Medical College, Chicago, 1905; member of the American Medical Association; on the staff of the Swedish Covenant Hospital; died August 24, aged 74, of cerebral hemorrhage.

Lloyd S. Settle, Mount Washington, Ky.; University of Louisville (Ky.) Medical Department, 1895; died August 11, aged 87, of uremia.

Guy Otey Shirey, Williams, Ariz.; University of Tennessee College of Medicine, Memphis, 1914; served during World War I; accompanied Admiral Richard E. Byrd to the South Pole on the second Antarctic Expedition; formerly district surgeon for the Southern Pacific Railroad, serving on the staff of Southern Pacific Hospital in Tucson; died in Fort Whipple June 30, aged 56, of cirrhosis of the liver.

Vladimir Nicholas Sikorsky, North Grafton, Mass. (licensed in New Hampshire in 1897); member of the American Medical Association and the New Hampshire Medical Society; died in St. Vincent's Hospital, Worcester, August 1, aged 80, of arteriosclerotic heart disease.

William Ebert Simon ⊕ Alva, Okla.; University of Kansas School of Medicine, Kansas City, 1913; served during World War I; died in the Alva General Hospital July 19, aged 60.

Jefferson B. Simons, Buckhannon, W. Va; Eclectic Medical Institute, Cincinnati, 1899; died July 25, aged 73, of heart disease.

Alexander Lorne Smith, Jersey City, N. J.; Queens University Faculty of Medicine, Kingston, Ontario, Canada, 1902; served in France as a captain in the medical corps of the U. S. Army during World War I; died July 1, aged 68, of cerebral thrombosis.

James Frederick Stafford, Lovilia, Iowa; Jefferson Medical College of Philadelphia, 1906; member of the American Medical Association; died July 5, aged 66, of coronary thrombosis.

Eugene W. Stevens, Onalaska, Wash.; Marion-Sims College of Medicine, St. Louis, 1893; member of the American Medical Association; served on the staff of St. Helen's Hospital in Chehalis; died in Chehalis June 27, aged 76, of carcinoma.

Joseph Alfred Stoner, York, Pa.; University of the City of New York Medical Department, 1886; died June 28, aged 85, of osteoarthritis of the lumbar spine.

Edward Francis Sullivan ⊕ Staunton, Ill.; St. Louis University School of Medicine, 1924; died August 1, aged 51, of coronary thrombosis.

Hugh H. Tabor, Weir, Miss.; Mississippi Medical College, Meridian, 1910; died June 10, aged 66, of heart disease.

William Francis Traughber, Lancaster, Calif.; College of Physicians and Surgeons, Los Angeles, 1911; died in July, aged 72, of cerebral hemorrhage.

Irving Emanuel Uram, Philadelphia; Jefferson Medical College of Philadelphia, 1942; member of the American Medical Association; interned at the Jefferson Medical College Hospital and served a residency at Philadelphia General Hospital; found dead near Thornhurst August 13, aged 30, following an airplane crash.

Algernon Stubblefield Vaiden, Monterey, Va.; University of Virginia Department of Medicine, Charlottesville, 1910; died August 1, aged 60, of heart disease.

Frederick Eugene Vest ⊕ Topeka, Kan.; State University of Iowa College of Medicine, Iowa City, 1885; Jefferson Medical College of Philadelphia, 1887; on the staff of Stormont Hospital; died in Kansas City, Kan., August 4, aged 88, of congestive heart failure.

Wilson Davenport Webb ⊕ Hackensack, N. J.; University of Buffalo School of Medicine, 1913; fellow of the American College of Surgeons; affiliated with the Hackensack Hospital; died August 6, aged 58, of cerebral hemorrhage.

Robert W. White, Youngstown, Ohio; Western Reserve University Medical Department, Cleveland, 1897; died July 23, aged 82, of coronary thrombosis.

Joseph Herbert Willis ⊕ Evansville, Ind.; Hospital College of Medicine, Louisville, Ky., 1897; fellow of the American College of Surgeons; on the staffs of the Deaconess and St. Mary's hospitals; died August 6, aged 75, of heart disease.

Arthur Lee Wilson, Lynchburg, Va.; Bellevue Hospital Medical College, New York, 1898; member of the American Medical Association; served during World War I; formerly president of the board of health and member of the city council; died August 4, aged 72, of cerebral hemorrhage.

Edwin Barnes Wilson ⊕ Brooklyn; Albany Medical College, 1905; for many years on the staffs of the Coney Island, Caledonian and St. Mary's hospitals; died August 3, aged 69, of cerebral hemorrhage.

John Thomas Winn, Cullman, Ala.; University of Tennessee Medical Department, Nashville, 1893; died in the Cullman Hospital August 4, aged 81, of chronic endocarditis with cardiac hypertrophy.

John Magee Wise ⊕ Watertown, Mass.; University of Buffalo School of Medicine, 1907; at one time superintendent of the New Hampshire State Sanatorium in Glencliff and the Sassaquin Sanatorium in New Bedford; formerly affiliated with the Middlesex County Sanatorium in Waltham; died August 7, aged 71, of coronary heart disease.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Sept. 27, 1947.

Congress of the International Society of Surgery

The twelfth congress of the International Society of Surgery was held in London, with the president, Dr. Leopold Mayer, of Brussels, Belgium, presiding. About one hundred members, including seventy official delegates from national committees of more than forty countries attended. The congress of the society had been held only once previously in London, in 1923. The president delivered an address, partly in French, partly in English, in which he recalled some of the famous members of the society: Emil Theodor Kocher would always be associated with the treatment of goiter; Czerny, of Heidelberg, Germany, would ever be famous for his researches on cancer, and Lucas-Championnière, of Paris, France, was immortalized by his work on orthopedic surgery. His own master, Antoine Depage, of Brussels, Belgium, showed organizing powers and military foresight equalled only by his surgical skill. The treatises of William Keen of Philadelphia on surgical technic are still [illegible]rred to. Others mentioned were Macewen, of Glasgow, [illegible]land; Giordano, of Venice, Italy; Hartmann, of Paris, and [illegible]s, of New Orleans. It was fitting that the country so valiantly led by Churchill should witness the first postwar international congress of surgery.

I. Penicillin in Surgery

At the first scientific session Sir Alexander Fleming discussed penicillin in surgery. He largely repeated what he said at the International Conference of Physicians. As the drug does not affect all microbes, the infecting organism must be susceptible to it. The dose must be adequate. There is now a tendency to higher dosage since correction of the original scarcity of penicillin. The drug must be administered so that it reaches the organisms. Intermittent injection is customary and there is evidence that it is not necessary to maintain a constantly high bacteriostatic level of the antibiotic in the blood. Ten minutes after injection a maximum concentration in the blood occurs; advantage can be taken of this in prophylactic use in extraction of septic teeth in rheumatic fever. Duration of treatment is important. While gonorrhea can be cured by one dose, subacute endocarditis may require treatment for months. Local treatment has definite possibilities. Pure penicillin can be injected into the theca in high concentrations without local irritation. Subconjunctival injections give hi[illegible] ncentrations in the eye.

Professor Walters, of the Mayo Clinic, said [illegible] ore the advent of penicillin staphylococcic septicemia car[illegible] ality of over 90 per cent in patients over 40 years o[illegible] on-amide drugs reduced the mortality to 40 per [illegible] ith penicillin it is well under 20 per cent. The effecti[illegible] drug in pyogenic meningitis and abscess of [illegible] remarkable. In thoracic surgery 50,000 units in isotonic sodium chloride solution have proved of imm[illegible] against empyem[illegible] In postoperative pneumonias it [illegible] outstandingly e[illegible]

II. Vascular S[illegible]

An ovation was g[illegible] Blalock, Johns H[illegible] Hospital, for the pr[illegible] operation for cong[illegible] pulmonary stenosis. U[illegible] ory treatment for [illegible] form of congenital heart [illegible] Since then a[illegible] advance has been made in [illegible] oups, patent ductus arteriosus, coarctation [illegible] sis. The object of his operation was to [illegible] vessel of the general circulation with high pressure to one of the pulmonary arteries with low pressure. On the right side the innominate, carotid or subclavian artery and on the left, the subclavian artery or possibly the aorta could be used. The object was to connect the systemic and pulmonary circulations. He usually performed end to side and occasionally an end to end anastomosis. Dr. Blalock showed a motion picture of the entire operation, ligation of the azygos vein, division of the mediastinal pleura, exposure of the right pulmonary artery, exposure of the innominate artery under the superior vena cava and anastomosis between the end of the subclavian artery and the side of the pulmonary artery. A fortnight after operation cyanosis had usually disappeared. Disappearance of clubbing of the fingers usually occurred later. In 474 cases there had been 86 deaths, but 18 fatalities followed operations in which it had been impossible to find a pulmonary artery. Among the last 38 successive cases there had been no deaths. Most of the patients who survived the operation had improved. Some who could walk only a few steps before now could walk miles. He showed 2 patients, a girl aged 3 and a boy aged 9, who had recently undergone this operation. They appeared to be normal children.

III. Social Functions

The president and council of the Royal College of Surgeons entertained representatives of most of the nations taking part in the congress at dinner. Professor G. Grey Turner led delegates and members on a pilgrimage of homage to places in London associated with John Hunter and Joseph Lister. Hunter's famous house in Leicester Square was visited first, then the church of St. Martin's in the Fields, where Hunter was originally buried. After sixty years his remains were removed at the expense of the Royal College of Surgeons to Westminster Abbey. The Abbey and the College, which has the marble statue of Hunter by Henry Weekes, were visited. Here the portrait of Lister by Ouless was displayed, as well as various pictures and instruments having an association with Hunter.

Lister's house and his statue in Portland Place were also visited and lastly University College, where exactly one hundred years ago Lister received his bachelor of arts degree.

IV. American Surgeons Honored; Gift to the Royal College of Surgeons

At a special ceremony five American surgeons were made honorary fellows of the Royal College of Surgeons, one was presented with the [illegible] ry Medal of the College and another with the Lister Me[illegible]

Sir Alfred Webb-[illegible] the president, said that the records of those it was pr[illegible] honor were a reminder of many great achievements [illegible] d States and Canada. The first recipient of the hon[illegible] ship was Dr. Arthur W. Allen, president of the A[illegible] ollege of Sur[illegible] He was introduced by Sir [illegible] lvie, who sa[illegible] Dr. Allen had made contributi[illegible] importance [illegible] ic surgery. Dr. Irvin Abell, of [illegible] t president [illegible] American College of Surgeons [illegible] oward La[illegible] Dallas B. [illegible] hemister, presiden[illegible] r. Alfred [illegible] were the [illegible] recipients. [illegible] Medal o[illegible] was [illegible] ed to Dr. W[illegible] past pre[illegible] Ameri- [illegible] of Su[illegible] Evarts [illegible]

[illegible] table [illegible] which [illegible] of high [illegible]

[illegible] the next [illegible] 1949 at

ITALY

(From Our Regular Correspondent)

Florence, Aug. 30, 1947.

Association for the Study of Allergy

The first scientific meeting of the Italian Association for the Study of Allergy was held in Milan Professor Amilcare Zironi was chairman and Professor Sangiorgi, whose initiative and activity was instrumental in the establishment of the association, acted as secretary. Professor Zironi announced that the invitation to join the International Association for Allergists had been officially accepted

Professor Guido Melli reported on antihistaminic compounds in the treatment of allergic diseases; he reported the results obtained with nicotinamide and with two recent antihistaminic compounds, "antergan" (dimethylamino-ethyl-benzylamine) and "antistin" (2-(N-phenyl-N-benzyl-aminomethyl)-imidazolin. The definitely different therapeutic behavior and the different degree of biologic activity are responsible for the statement that nicotinamide works by another mechanism, although it possesses an antihistaminic activity. The speaker did not obtain immediate results with nicotinamide, but a protracted course of treatment yielded relatively favorable, permanent results in bronchial asthma and serum disease, both prophylactically and therapeutically. The results were doubtful in hemicrania. The treatment was practically ineffective in urticaria and in exudative eczema.

The results with the two other compounds experimented with were on the contrary obtained rapidly but were often only transitory. Good results were obtained in pruritus, in urticaria, sometimes in hemicrania and in exudative eczema. Results were negative in bronchial asthma, in serum disease, in 2 cases of acute articular rheumatism and in 1 case of erythema nodosum. The speaker considered it peculiar that bronchial asthma, the most typical allergic disease, proved completely refractory to this method of treatment and that favorable results were likewise obtained only occasionally by other authors. Professor Melli stated that this behavior may be explained by the fact that allergy may not be considered as a pathogenic factor in all cases of asthma.

Professor Piero Redaelli reported on morphologic manifestations of gastric allergy in describing 1 case of lead poisoning with nephritis and severe hypertension in a man aged 53; death resulted from cerebral hemorrhage. Necropsy revealed that the gastric mucosa, at the level of the pyloric antrum toward the lesser curvature, presented three elevated patches, each with a diameter of 1 cm., while the corresponding mucosa was curved like a watchglass and was pale. Microscopic examination revealed a circumscribed serous imbibition of the mucosa corresponding with a small inflammatory infection of the submucosa manifested by some polymorphonuclears and by monocytic elements which were accumulated in small congested blood vessels. Professor Redaelli emphasized that this change is something more important than a simple elevated patch; it may be interpreted as equivalent to a local anaphylactic process of Arthus' type, analogous to the well known manifestations of gastric allergy, such as urticaria, or Quincke's edema, which many times has been demonstrated clinically but very seldom pathologically.

Dr. Mario Staffieri stated that many times he has been able to observe factors of specific allergic sensibilization in patients who presented acute catarrhal manifestations of the middle ear. In 1 patient an endotympanic transudate and signs of auricular pain arose unexpectedly after the allergogenic *stimulus* of some intensely positive cutaneous tests. Also, in some cases in which the diagnosis of chronic catarrhal otitis media was made the auricular lesions were due to the acute endotympanic hydrops which, following the allergic stimuli, may recur and become chronic with the ensuing organization of the transudate. Other aspects of disturbances of the middle ear may be attributed to an allergic mechanism by interpreting them as complications of an allergy of the upper portion of the respiratory tract and sometimes as a manifestation of an allergic-hyperergic reaction localized in the middle ear. In those cases one has to deal with endotympanic transudates following an allergy to food or to inhaled agents; or tubal stenoses, depending on nasopharyngeal allergies; or tubal otorrhea in infants with exudative diathesis, with alimentary intolerance or with intestinal parasites depending on an allergizing action.

The papers presented at this meeting and those which will be presented at coming meetings will be published in the *Quaderni della allergia,* which will soon resume publication as the official bulletin of the Italian Association for the Study of Allergy.

PARIS

(From Our Regular Correspondent)

Sept. 15, 1947.

International Union Against Tuberculosis

The Council of the International Union Against Tuberculosis, whose secretary general is Professor Fernand Bezancon, met in Paris on July 28-29, with Professor Lopo de Carvalho in the chair. Twenty-five nations were represented at this meeting: Austria, Belgium, Canada, Cuba, Czechoslovakia, Denmark, Finland, France, Great Britain, Greece, Hungary, India, Ireland, Italy, Luxemburg, the Netherlands, New Zealand, Norway, Poland, Portugal, Sweden, Switzerland, the United States, Uruguary and Yugoslavia.

Delegates from the United States included Dr. Kendall Emerson, Dr. Corwin Hinshaw, Dr. Herman E. Hilleboe, Dr. Esmond Long and Mr. F. D. Hopkins; from France, Professor Fernand Bezancon, Professor Etienne Bernard, Dr. Guerin, Dr. Rist and Dr. Poix (representing Dr. Bariety); from Great Britain, Drs. A. Morland, F. R. C. Heaf, Lloyd Rusby, R. R. Trail and Harley Williams.

The council decided that the closest cooperation is to be kept up with the World Health Organization; that the proposed modifications of the by-laws of the Union be examined and discussed. The constitution of the executive committee is to be altered, so that it should include, as well as existing members, delegates from South America, Canada, Denmark, India, Norway and Soviet Union.

The first scientific session, at the Laënnec Hospital, was devoted to the report by Professor Etienne Bernard on streptomycin. From a wholly objective point of view and with the help of excellent pictures, the speaker described the cures he had obtained and the negative results he had observed. This report was followed by a discussion in which the following members took part: Dr. Mollaret, Dr. Derscheid, Dr. Andre, Professor Omodei Zorini, Professor V. Fici and Dr. Yevrem Nedelkowitch.

During the second scientific session, at the great amphitheater of the Pasteur Institute, under the presidency of Professor Trefouel, director of the Pasteur Institute, Dr. Corwin Hinshaw described the research which he and Dr. Feldman accomplished on streptomycin, the clinical results they obtained, the hopes which could be entertained and the precautions which should be taken. The next conference of the Union is to be summoned in Copenhagen, Denmark, in 1950.

Correspondence

DOCTORS DISTINGUISHED AS SCIENTISTS

To the Editor:—Many doctors have done such excellent scientific research that they have been widely recognized as distinguished scientists. William James became America's most distinguished psychologist, David Starr Jordan one of the greatest zoologists, Samuel W. Williston an outstanding paleontologist, Asa Gray the most distinguished botanist of his period, Hrdlička one of the great anthropologists.

Among scientists sketched in the biographic directory, "American Men of Science," seven editions, 1906-1944, are some three hundred and fifty M.D.s starred as especially distinguished in research by secret vote of their fellow scientists.

Six anatomists had their undergraduate training at Harvard, 6 at Toronto, 5 at Michigan, 4 at Hopkins, 4 at Yale, 3 at Pennsylvania, and 2 each at Brown, Chicago, Cornell, Kansas, Missouri, Princeton and Washington (St. Louis). Teachers listed as especially stimulating by the anatomists who filled out the 1946 questionnaire were S. H. Gage (Cornell), F. P. Mall (Hopkins), C. M. Jackson (Harvard) and J. B. MacCallum (Hopkins).

Twenty pathologists had their undergraduate training at **Harvard,** 14 at Yale, 6 at Hopkins, 5 at Princeton, 4 at Michigan and 3 each at Amherst, Columbia, Massachusetts Institute of Technology and Toronto. Teachers reported as especially stimulating were W. H. Welch, W. H. Howell, *J. B. MacCallum* and William Osler (all at Hopkins).

Of the physiologists, Harvard gave college degrees to 12, Hopkins and Yale to 7, Chicago and Michigan to 6, Columbia and Wisconsin to 4, Illinois, Kansas and Pennsylvania to 3. *Physiology teachers listed as especially stimulating were* A. J. Carlson (Chicago), W. B. Cannon (Harvard), Jacques Loeb (Columbia), L. B. Mendel (Yale) and J. J. Abel (Hopkins).

Doctoral Training

Anatomists.—Hopkins conferred doctorates on 17 of the subsequently starred anatomists, Harvard on 9, Columbia on 7, Chicago and Michigan on 6, Brown, Pennsylvania and Yale on 3. Notably prominent in the graduate training of anatomists were F. P. Mall (Hopkins), R. R. Bensley (Chicago) and C. S. Minot (Harvard).

Pathologists.—Harvard with 30, Hopkins with 31, Columbia with 23 and Pennsylvania with 17 were the leading universities in the doctoral training of pathologists. No other school graduated more than 5. Graduating 4 or 5 were Bellevue, Chicago, Maryland, Michigan, Rush, Yale and McGill. Relatively important teachers in the doctoral training of pathologists were W. H. Welch, W. S. Halsted, W. H. Howell, W. G. MacCallum and William Osler (all at Hopkins) and G. H. Parker at Harvard.

Physiologists.—In the doctoral training of physiologists the early leader was Hopkins, by a wide margin; for those starred 1909-1943, Chicago led, with Harvard close behind. The totals for all periods were Hopkins 23, Chicago 14, Columbia 10, Harvard 10, Pennsylvania 8, Yale 7 and Michigan 6. Persons that were apparently relatively significant in the graduate training of physiologists were A. J. Carlson (Chicago), W. B. Cannon (Harvard), B. H. Chittenden and L. B. Mendel (Yale), J. Loeb (Columbia), J. J. Abel, F. P. Mall and *E. V. McCollum* (Hopkins) and G. Lusk (Cornell).

Birthplaces

Anatomists.—Of the 11 foreign-born starred anatomists, 6 wer [illegible] 2 British, 1 Czechoslovak and 1 Scandinavian. O [illegible] States, the Middle Atlantic States ([illegible] New Jersey) yielded 20, New E [illegible] al States 12, the West North C [illegible] the country only 10.

Pathologists.—Of the 25 foreign-born pathologists, Canada yielded 8, Britain 4, Germany 3, Russia 3, Austria, France and Switzerland 2 each and Asia 1. In proportion to the number of immigrants in the United States from those countries, the yield was highest from Switzerland, Austria, Russia and Canada. Of those born in the United States, the Middle Atlantic States *yielded 45, the East North Central States 32, New England 31,* the South Atlantic States and the West North Central States each 10, the South Central 9 and the West 3.

Physiologists.—Of the 26 foreign-born physiologists, Canada and Britain each yielded 6, Germany 4, Austria and Russia 2, the Netherlands, Scandinavia, Spain, Switzerland, Africa and Asia each 1. In proportion to the number of immigrants, Austria, Canada, the Netherlands and Switzerland led, with about 1 per 100,000; Britain and Russia did half as well; Germany, one fifth. Of those born in the United States, the East North Central States led with 27, followed by the Middle Atlantic States 23, West North Central States 14, New England States 12, South Atlantic States 10 and the rest 9.

The available information indicates that about a quarter of these distinguished doctors were of Puritan ancestry, a fifth were of other English, about a sixth were Scotch, a sixth German and about 5 per cent each, Dutch and Scandinavian. About 5 per cent of the total were Jewish.

Professor Stephen S. Visher, Bloomington, Ind.

THE BOY SCOUT JAMBOREE

To the Editor:—The international Boy Scout Jamboree, held for this quadrennial at the quiet little village of Moisson, some 40 miles northwest of Paris, and opened officially on August has just closed (August 18). Some 40,000 scouts attended from many different countries. The meeting has proved highly successful and important from many social and international points of view.

Medical interest centers in the facilities organized to cope with surgical, medical and dental needs, mostly of emergency character. The chief in charge was Dr. Francis Lazard, who served in North Africa and Italy and on the southern and Atlantic coasts of France. The Moisson organization included 150 beds for medical cases distributed among three tents, 50 beds for surgery in two tents and two mobile dental units. Two operating rooms were provided and radiologic, laboratory and accessory facilities were available. The equipment was provided by the medical section of the French army. Twenty-five physicians and surgeons were allotted to the hospital service and 20 more were stationed at first aid points distributed throughout the camp.

Occasionally as many as 228 patients (mostly with sore throats) were hospitalized at once. The average number per day was stated as 2 cases. However, the most important service was surgical, the cases largely consisting of arm and leg fractures mainly occasioned through accidents occurring on the belt-line train which circulated throughout and around the camp. There were a few cases of drowning, the camp lying close to a beach in the Seine, and the total mortality is reported at 6 cases.

These details reported were taken from a statement published in the *Jamboree France* of August 19 (the journal issued by the camp authorities and printed in several languages) and also from information supplied by a group of the Scouts.

This is scarcely the place for an essay on the moral, social and political influences which will emanate very fruitfully from this assembly of international youth, but at least its great importance may be briefly stressed, self evident as it is to any careful observer.

Theodore C. Merrill, M.D., Paris, France

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

NATIONAL BOARD OF MEDICAL EXAMINERS EXAMINING BOARDS IN SPECIALTIES

Examinations of the National Board of Medical Examiners and the Examining Boards in Specialties were published in The Journal, Oct. 25, page 533.

BOARDS OF MEDICAL EXAMINERS

Alabama: *Examination.* Montgomery, June 22-24, 1948. Sec., Dr. D. G. Gill, 519 Dexter Ave., Montgomery 4.

Arkansas:* *Examination.* Texarkana, Nov. 6-7, 1947. Sec., L. J. Kosminsky, Texarkana. *Eclectic.* Little Rock, Nov. 6. Sec., Dr. Clarence H. Young, 1415 Main St., Little Rock.

California: *Oral.* Los Angeles, Nov 8-9. Sec., Dr. Frederick N. Scatena, 1020 N St., Sacramento 14.

Colorado:* Denver, Jan. 6-9. Final date for filing application is Dec. 20. Sec., Dr. J. B. Davis, 831 Republic Bldg., Denver 2.

Connecticut:* *Examination.* Hartford, Nov. 11-12. Sec., Dr. Creighton Barker, P. O. Box 1438, New Haven.

Delaware: *Examination.* Dover, Jan. 13-15. *Endorsement.* Dover, Jan. 20. Sec., Dr. J. S. McDaniel, 229 S State St., Dover.

District of Columbia:* *Examination.* Washington, Nov. 10-11. Sec., Commission on Licensure, Dr. G. C. Ruhland, 6012 Municipal Bldg., Washington.

Florida:* *Examination.* Jacksonville, Nov. 25-26. Sec., Dr. Harold D Van Schaick, 6675 Windsor Lane, La Gorce Island, Miami.

Hawaii: *Examination.* Honolulu, Jan. 12-15, 1948. Sec., Dr. S. E. Doolittle, 881 S. Hotel St., Honolulu, T. H

Idaho: Boise, Jan. 13-15. Sec., Miss Estella S. Mulliner, 355 State House, Boise.

Indiana: *Examination.* Indianapolis, June 1948. Sec., Board of Medical Registration and Examination, Dr. Paul R. Tindall, K of P Bldg., Indianapolis.

Kansas: Topeka, Dec. 3-4. Sec., Board of Medical Registration and Examination, Dr. J. F. Hassig, 905 N. 7th St., Kansas City.

Maine: Portland, Nov. 12-13. Sec., Dr. A. P. Leighton, 192 State Street, Portland.

Maryland: *Medical Examination.* Baltimore, Dec. 9-12. Sec., Dr. Lewis P. Gundry, 1215 Cathedral St., Baltimore. *Homeopathic Examination.* Baltimore, Dec. 9-10. Sec., Dr. J A. Evans, 612 W. 40th St., Baltimore.

Massachusetts: *Examination.* Boston, Nov. 18-21. Sec., Dr. H. Q. Gallupe, 413-E State House, Boston.

Michigan:* *Examination.* Lansing, Nov. 19-21. Sec., Board of Registration in Medicine, Dr. J. E. McIntyre, 100 W. Allegan St., Lansing 8.

Mississippi: *Endorsement.* Jackson, Dec. 1947. Asst. Sec., State Board of Health, Dr. R. N. Whitfield, Jackson.

Nebraska:* *Examination.* Omaha, Dec. Dir., Bureau of Examining Boards, Mr. Oscar F. Humble, 1009 State Capitol Bldg., Lincoln.

Nevada: Carson City, Nov. 3. Sec., Dr. G. H. Ross, 215 N. Carson St., Carson City.

New Hampshire: *Examination.* Concord, March 11-12. Sec., Board of Registration in Medicine, Dr. John S. Wheeler, 107 State House, Concord.

New York: *Examination.* Albany, Buffalo, New York, Syracuse, Feb. 16-19. Sec., Dr. J. L. Lochner, Jr., Education Bldg., Albany.

North Dakota: Grand Forks, Jan. 6-9. Sec., Dr. G. M. Williamson, 4½ S. Third St., Grand Forks.

Ohio: *Examination.* Columbus, Dec. 2-4. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus.

Pennsylvania: *Examination.* Harrisburg, Jan. 1948. Acting Sec., Board of Medical Education and Licensure, Mrs. M. G. Steiner, 351 Education Bldg., Harrisburg.

South Carolina: Columbia, Nov. 10-12. Sec., Dr. N. B. Heyward, 1329 Blanding St., Columbia.

South Dakota:* Pierre, Jan. 20. Sec., State Board of Health, Dr. Gilbert Cottam, Capitol Bldg., Pierre.

Texas: San Antonio, Nov. 12-14, 1947. Sec., Dr. T. J. Crowe, 918-20 Texas Bank Bldg., Dallas 2.

Utah: *Examination.* Salt Lake City, June, 1948. Asst. Dir., Department of Registration, Miss Rena B. Loomis, 324 State Capitol Bldg., Salt Lake City.

Virginia: Richmond, Dec. 4-6. Sec., Dr. K. D. Graves, 30½ Franklin Rd., Roanoke.

West Virginia: Charleston, Jan. 12-14. Comm., Public Health Council, Dr. N. H. Dyer, State Capitol, Charleston 5.

Wyoming: *Examination.* Cheyenne, Feb. 2. Sec., Dr. G. M. Anderson, Capitol Bldg., Cheyenne.

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* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Arizona: Dec. 16. Sec., Mr. Francis A. Roy, Science Hall, University of Arizona, Tucson.

Colorado: *Examination.* Denver, Dec. 17-18. Sec., Dr. Esther B. Starks, 1459 Ogden St., Denver.

Iowa: Des Moines, Jan. 13, April 13, July 13, Oct. 12. Sec., Dr. Ben H. Peterson, Coe College, Cedar Rapids.

Michigan: *Examination.* Ann Arbor and Detroit, Jan. 9-10. Sec., Miss Eloise LeBeau, 101 N. Walnut St., Lansing.

New Mexico: *Examination.* Santa Fe, Nov. 2. Sec., Miss Marion M. Rhea, 114 E. Marcy, Santa Fe.

Oklahoma: Spring 1948. Sec., Dr. Frank Clinton Gallaher, 813 Braniff Bldg., Oklahoma City.

Oregon: *Examination.* Portland, Dec. 6. Admin., Mr. C. D. Byrne, Univ. of Oregon, Eugene.

South Dakota: Aberdeen, Dec. 5-6. Sec., Dr. G. M. Evans, Yankton.

Wisconsin: *Examination.* Milwaukee, Dec. 6. Sec., Prof. W. H. Barber, Scott and Watson Sts., Ripon.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Photographs: Who Owns Negatives?—The plaintiff filed an action in replevin to recover the negatives of some photographs taken by the defendant, a professional photographer. From a judgment in favor of the plaintiff, the defendant appealed to the Supreme Court, Appellate Term, First Department, New York.

The question involved on this appeal, said the court, is whether, in the absence of an agreement on the subject, negatives belong to the customer or to the photographer. The photographs in question were taken for an agreed price, were delivered and the bill was paid. The plaintiff then demanded delivery of the negatives. Testimony was given that there was an established custom with reference to the retention of negatives; that "it has always been the custom for photographers to retain the negatives." There having been no agreement with respect to the negatives, it would seem that the custom and usage of the industry with respect thereto should prevail. The plaintiff urges, however, that it is established law that the customer has the right to the possession of the negatives. If that is so, any alleged custom or usage to the contrary would be ineffective. Research, said the court, has failed to disclose any case, in this jurisdiction at least, where the ownership of negatives was decided by the court in the absence of an agreement. It is true that the photographer's right to retain the negatives gives him no right to use them for any purpose whatsoever, except at the request of the customer. The photographer, for example, cannot sell the negatives or make photographs from them for any one except the customer. There is nothing inconsistent with proprietary rights in the customer and the holding that the custody of the plates should remain with the photographer. This view would seem to represent the expectations of the party in the absence of any special agreements to the contrary. There are indications in some of the decisions, although no definite adjudication on the subject, that the photographer has the right to retain the custody of the negative. For example, in a case decided in the federal court (*Corliss* v. *E. W. Walker Co.*, 64 F. 280) it was said, "When a person engages a photographer to take his picture, agreeing to pay so much for the copies which he desires, the transaction assumes the form of a contract; and it is a breach of contract, as well as a violation of confidence, for the photographer to make additional copies from the negatives. The negative may belong to the photographer, but the right to print additional copies is the right of the customer." And in an English case (*Pollard* v. *Photographic Co.* [1888], 40 Ch. Div. 345) the court said, "It may be said that in the present case the property in the glass negatives is in the defendant (photographer) and that he is only using his own property for a lawful purpose, but it is not a lawful purpose to employ it, either in breach of faith or in breach of contract."

In conclusion the court held that where a customer employed a photographer to make pictures of him, the photographer, in the absence of any agreement to the contrary, has the right to retain the negatives. He may not, however, make any use of the negatives without the permission of the customer. The judgment in favor of the plaintiff was therefore reversed.—*Hochstadter v. H. Tarr, Inc., 68 N. Y. S. (2d) 762 (New York, 1947).*

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1937 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied with stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted.

American Journal of Clinical Pathology, Baltimore

17:507-584 (July) 1947

Mucopolysaccharide Content of Skin in Localized (Pretibial) Myxedema. E. M. Watson and R. H. Pearce.—p. 507.
Progress in Cancer Research. W. M. Simpson.—p. 513.
Pathologist's Contribution to Clinical Interpretation of Disorders of the Newborn. Edith L. Potter.—p. 524.
*Serum Phosphatase and Other Tests of Liver Function in Infectious Mononucleosis. E. A. Gall.—p. 529.
Meningitis Caused by Friedlander's Bacillus or Aerobacter Aerogenes: Report of 2 Cases with Autopsies. P. T. Hough and L. Adelson. —p. 534.

Liver Function Tests in Infectious Mononucleosis.—According to Gall, enlargement of the liver, with or without jaundice, is often observed in infectious mononucleosis. The present study was carried out as the result of an accidental observation of an elevated serum phosphatase in a nonjaundiced patient with infectious mononucleosis. Subsequently, 33 patients with this disease were encountered and were investigated with a view to determining the frequency with which phosphatase alteration occurred in infectious mononucleosis. Icterus index, cephalin flocculation and thymol turbidity were also determined. All 34 patients exhibited the blood picture and other clinical manifestations of infectious mononucleosis and all but 1 had heterophil antibody titers of at least 1: 112, a diagnostic level. Only 1 patient was frankly jaundiced, and 2 others exhibited a subicteric hue. Significantly elevated alkaline phosphatase, slightly increased icterus indexes and positive cephalin flocculation and thymol turbidity tests were found whether or not clinical jaundice was present. Alteration in liver function as manifested by these tests was present in almost all patients with infectious mononucleosis.

American J. Digestive Diseases, Fort Wayne, Ind.

14:215-244 (July) 1947

Prolapse of Redundant or Hypertrophied Gastric Mucosa. S. P. Bralow and M. Melamed.—p. 215.
*Perforation of Gall Bladder. S. Hyman and F. Steigmann.—p. 221.
Influence of an Antacid (Nonreactive Aluminum Hydroxide Gel) on Evacuation of Bowels and Fecal Column. A. X. Rossien and A. W. Victor.—p. 226.
Preparation and Nutritive Value of an Incomplete Acid Hydrolysate of Casein. M. Sahyun, C. F. Kade and J. Houston.—p. 230.
Some Considerations of the Possible Relationship of Cholesterol Metabolism to Peptic Ulcer. M. Hyman.—p. 235.
Epidemiology of a Food Poisoning Epidemic (Staphylococcus Enterotoxin). N. E. Reich.—p. 238.
Pruritus of the Perineum. M. Golob.—p. 240.

Perforation of Gallbladder.—Hyman and Steigmann state that postmortem material of biliary tract disease in the Cook County Hospital for the past thirteen years revealed 45 instances of perforation of the gallbladder. In only 10 of the 45 was some type of biliary tract trouble diagnosed prior to death. The correct diagnosis of perforation of the gallbladder was not made in a single instance prior to death. In the other 35 cases there was a variety of diagnoses, the commonest being intestinal obstruction and acute cholecystitis. There were 17 males. This comparatively high incidence of perforated gallbladder in the male is astonishing because of the general belief that disease of of the gallbladder is rare in the male. Over 90 per cent of the patients with perforation of the gallbladder had stones either in the gallbladder or the common duct and over 80 per cent had evidence of chronic cholecystitis. The reasons for delay in surgery in gallbladder disease are procrastination by patients, acquiescence in this by their physicians and uncertainty in the minds of some physicians as to the indications for surgery of the gallbladder.

American Journal of Hygiene, Baltimore

46:1-148 (July) 1947. **Partial Index**

Cultivation of Yellow Fever Virus. J. P. Fox.—p. 1.
Infections of Chicks with Single Parasites of Plasmodium Gallinaceum Brumpt. W. G. Downs.—p. 41.
Observations on Tsutsugamushi Disease (Mite-Borne or Scrub Typhus) in Northwest Honshu Island, Japan, in Fall of 1945. C. B. Philip. —p. 45.
Typhus at Belsen. I. Control of the Typhus Epidemic. W. A. Davis. —p. 66.
Studies in Human Malaria. G. R. Coatney, W. C. Cooper, M. D. Young and S. B. McLendon.—p. 84.

American Journal of Medicine, New York

3:129-258 (Aug.) 1947

*Intercapillary Glomerulosclerosis. L. L. Henderson, R. G. Spraue and H. P. Wagener.—p. 131.
Diabetes and Hypertension. E. Foldes.—p. 145.
Insulin Mixtures: Evaluation of Their Use in 150 Cases. W. S. Collens, L. C. Boas and J. D. Zilinsky.—p. 155.
Experience with Insulin Mixtures. L. J. Palmer and J. H. Crampton. —p. 167.
Myasthenia Gravis and Spontaneous Curarism: Lipidystrophy as Possible Cause. R. de Rohan Barondes.—p. 171.
Jejunal Syndrome. O. Porges.—p. 177.
Use of Injector Meter for Maintenance of Prescribed Oxygen Concentration and Elimination of Carbon Dioxide in Closed Head Tents. A. L. Barach, with technical assistance of Eva Levenson and C. C. Rumsey Jr.—p. 181.
Effect of Propylene Glycol on Antibiotic Activity of Human Serum. S. J. Prigal, T. H. McGavack and Mary Bell.—p. 185.
Management of Acute Toxic Nephrosis. V. H. Kugel.—p. 188.
*Enhancement of Penicillin Blood Levels in Man by Means of New Compound, Caronamide. C. C. Shaw, W. P. Boger, J. W. Crosson and others.—p. 206.

Intercapillary Glomerulosclerosis.—Henderson and his co-workers report 61 cases of intercapillary glomerulosclerosis in 313 cases of diabetes mellitus. In 30 patients hyalin-like, globular, deeply staining lesions like those originally described by Kimmelstiel and Wilson could be demonstrated and were classified as "advanced." In 31 patients small, deeply staining, club-shaped masses situated in the midst of a diffuse thickening along the axis of the lobule could be demonstrated; these lesions were classified as "early." That intercapillary glomerulosclerosis is not specific for diabetes mellitus at least morphologically is shown by the fact that among 81 cases of glomerulonephritis in nondiabetic patients there were 7 patients with early intercapillary glomerulosclerosis and 3 with advanced lesions. Seven cases with early lesions were observed among 134 cases in which the death of nondiabetic patients was due to hypertension and its complications. Severe lesions were by far the most frequent in diabetes. There were important differences in the clinical behavior in cases of diabetes mellitus and in those of glomerulonephritis in which intercapillary glomerulosclerosis was present. Intercapillary glomerulosclerosis may be considered as a slowly progressive process related to the duration of diabetes mellitus. The diagnosis of intercapillary glomerulosclerosis cannot be established with complete certainty during life, but the condition can be strongly suspected in patients who have diabetes mellitus of long standing associated with albuminuria, hypertension, renal insufficiency and mixed vascular and diabetic retinopathy. The more complex and advanced the retinopathy, the more likely is its association with intercapillary glomerulosclerosis.

Penicillin Blood Levels After Caronamide.—Shaw and his co-workers gave 100,000 units of penicillin and 2.0 Gm. of "staticin" (caronamide, 4'-carboxyphenylmethanesulfonanilide) by mouth every four hours to 6 afebrile patients for six consecutive days. Penicillin was given intramuscularly and caronamide by mouth to an additional 5 patients. The effect of caronamide by mouth on penicillin in beeswax-oil was studied in 3 patients. Each patient served as his own control. During the control phase of forty-eight hours, the patient received penicillin only. This was followed by a period during which the administration of penicillin was supplemented by oral administration of caronamide (the drug phase), followed by a third period when penicillin only was administered (the postdrug control phase). Caronamide inhibited the renal tubular excretion of penicillin and thereby elevated the concentration of penicillin in the plasma from twofold to sevenfold after the oral and/or parenteral administration of penicillin. Caronamide produced no evidence of renal, bone marrow or hepatic impairment, dermatitis or drug fever. These preliminary clinical studies indicate that caronamide should be of definite value in the treatment of disease conditions in which high levels of penicillin in the blood are required.

American Journal of Physiology, Baltimore

150:1-228 (July) 1947. Partial Index

Oxygen Content of Arterial Blood in Dogs Breathing Air at Low Barometric Pressures. R. A. Miller, Beatrice S. Heagan and C. B. Taylor.—p. 1.
Circulatory and Cerebral Changes and Protective Aids During Exposure to Acceleratory Forces. S. W. Britton, V. A. Pertzoff, C. R. French and R. F. Kline.—p. 7.
Distribution of Total Electrolyte, Potassium and Sodium in Cerebral Cortex in Relation to Experimental Convulsions. H. F. Colfer and H. E. Essex.—p. 27.
Action of Adrenaline on Spinal Neurones Sensitized by Partial Isolation. G. W. Stavraky.—p. 37.
Stability of Prothrombin. A. G. Ware, M. M. Guest and W. H. Seegers.—p. 58.
Effect of Discontinuous Chronic Anoxia on Liver Glycogen Stores. O. E. Reynolds.—p. 65.
Pituitary and Ovarian Dysfunction in Experimental Diabetes. Elva G. Shipley and Katherine S. Danley.—p. 84
Quantitative Study of Effect of Hyperthyroidism on Genital Structure and Function. K. M. Richter and C. A. Winter.—p. 95.
Acclimatization to Extreme Cold. S. M Horvath, A. Freedman and H. Golden.—p. 99.
Fatigue of Standing. Eleanor M. Larsen p 109.
Relations Between Cutaneous Blood Flow and Blood Content in Finger Pad, Forearm, and Forehead. A. B. Hertzman, W. C. Randall and K. E. Jochim.—p. 122.
Studies on Recurrence of Decompression Sickness on Re-Ascent to High Altitudes. S. Rodbard.—p. 133.
Effect of Oxygen, Altitude and Exercise on Breath Holding Time. S. Rodbard.—p. 142.
Effect of Stimulation of Carotid Sinus Region on Absorption of Chloride from Small Intestine. E. J. Van Liere, J C. Stickney and D. W. Northup.—p. 149.
Size and Function of Human Heart at Rest in Semi-Starvation and in Subsequent Rehabilitation. A. Keys, A. Henschel and H. L. Taylor. —p. 153.
Plasma Volume and Thiocyanate Space in Famine Edema and Recovery. A. Henschel, O. Mickelsen, H. L. Taylor and A. Keys.—p. 170.
Renin Content of Renal Venous Blood of Normal and Hypertensive Patients at Rest. Florence W. Hayes, L. Dexter and R. E. Seibel. —p. 198.
Alveolar Aid During Simulated Flights to High Altitudes. H. Rahn and A. B. Otis.—p. 202.

Anesthesiology, New York

8:339-452 (July) 1947

Absorption of Carbon Dioxide from Anesthetic Atmospheres: Historical Aspects. R. M. Waters.—p. 339.
Curare and Curare-Like Compounds: Review. B. J. Robbins and J. S. Lundy.—p. 348.
Anesthesia: XXVII. Narcosis with Vinyl Chloride. R. H. Oster, C. J. Carr and J. C. Krantz Jr., with technical assistance of Mary J. Sauerwald.—p. 359.
Chloroform. H. W. Featherstone.—p. 362.
Method for Accurately Measuring Rate of Flow of Intravenous Fluids. D. J. Graubard, R. W. Robertazzi and M. C. Peterson.—p. 372.
Factors Affecting Pentothal Anesthesia in Dogs. B. de Boer.—p. 375.
Spinal Fluid Findings in Spinal Anesthesia. M. G. Black.—p. 382.
Examination of Local Anesthetic Action of Some Synthetic Sweet Substances and Other Phenyl Alkyl Derivatives. L. Vandam and A. Lamont.—p. 390.
Management of Anesthetized Patient. A. L. Schwartz and E. Rosenblum.—p. 395.

Archives of Otolaryngology, Chicago

46:1-124 (July) 1947

Deafness, Tinnitus, Vertigo and Neuralgia. D. J. Goodfriend.—p. 1.
Effect of Various Solutions of Penicillin Sodium and Penicillin Calcium on Respiratory Nasal Mucosa of Rabbits. N. D. Fabricant, A. R. Hollender and H. W. Anderson.—p. 36.
Spontaneous Cerebrospinal Rhinorrhea: Successful Surgical Treatment. J. G. Love and J. R. Gay.—p. 40.
*Massive Atelectasis Following Tonsillectomy Under Local Anesthesia: Report of Case. L. L. Sawyer.—p. 45.
*Sensitivity from Insufflation of Powdered Sulfonamide Compounds in Acute Infections of Nose and Throat. H. C. Ballenger.—p. 52.
Rubber Catheter Used to Maintain Patency of Ostium in Dacryocystorhinostomy: Preliminary Report. J. L. Goldman.—p. 58.
Tuberculosis. G. E. Wilson and W. K. Stern.—p. 73.

Atelectasis After Tonsillectomy.—Sawyer reports a case of atelectasis twenty-four hours after tonsillectomy under local anesthesia in a woman aged 25. There was an average amount of bleeding during the operation which was readily controlled without ligatures or stitches. The patient was an actress, high strung and nervous. She was given more than the average preoperative sedation. Despite this she did not sleep after the operation and was given 0.011 Gm. of "pantopon" (a mixture of hydrochlorides of opium alkaloids) three and a half hours postoperatively. Her sedation plus her fear of pain from coughing may have favored the inspiration of blood and saliva which acted as a nucleus. Bronchoscopy was performed and the right main bronchus was found to contain a bloody mucous plug which was aspirated. The patient showed considerable improvement immediately. She was discharged on the sixth postoperative day in good condition. Bronchoscopy with visual aspiration is one of the safest and best methods of treating collapse of the lung.

Insufflation of Sulfonamide Drugs.—Ballenger applied sulfathiazole, sulfanilamide and sulfadiazine powders, alone or in combination, by insufflation to the mucous membrane of the upper respiratory tract in 1,500 patients with various acute infections of the nose and throat. Six thousand applications were made during a three year period from July 1, 1943 to July 1, 1946. An average of about 2.5 treatments were given for each acute attack. Many of the patients have had two, three or more attacks during the three year period. The sore throat and inflammation, especially that of the palate, nasopharynx and pharynx, were frequently stopped within twenty-four hours. The rhinitis and the cough would continue to develop in many patients but not in as many as had been formerly observed. The numbers in whom sinusitis and the various forms of otitis developed were definitely lessened when compared with the numbers of patients not so treated in whom these complications appeared. The greatest value of the insufflation of the powdered sulfonamide compounds appeared to be in the first three or four days of the acute infection. Insufflation of the sulfonamide compounds proved to be as safe as their oral use. Only 7 out of the 1,500 treated gave evidence of sensitivity as manifested by dermatitis, hives or hay fever–like symptoms.

Bull. of U. S. Army Med. Dept., Washington, D. C.

7:655-738 (Aug.) 1947

Value of Physical Therapy in Internal Medicine. G. M. Piersol.—p. 674.
Studies on Pharmacology of Fluoroacetate: II. Action on Heart. M. B. Chenoweth and A. Gilman.—p. 687.
Artificial Respiration and the Pneumatic Balance Resuscitator. H. J. Jacobs.—p. 707.
Mediastinal Emphysema Secondary to Brachial Plexus Block. E. G. Dimond, B. Root and M. H. Delp.—p. 718.
Aerobacter Aerogenes Meningitis. C. L. Neill and H. E. Blechman. —p. 722.
Role of Research Psychologists in Military Service. A. C. Tucker. —p. 726.
Dissociated Peroneal Nerve Lesions. M. E. Pusitz and F. W. Lusignan. —p. 733.

California Medicine, San Francisco

67:69-152 (Aug.) 1947

Viral Hepatitis and Public Health. A. M. Snell.—p. 69.
Cyclodialysis, Multiple or Single, with Air Injection—Operative Technic for Chronic Glaucoma. O. Barkan.—p. 78.
*Treatment of Acute Hematogenous Osteomyelitis with Penicillin and Sulfonamides Combined. S. S. Mathews and C. G. Hutter Jr.—p. 84.
Quinidine in Heart Disease, Particularly in Older Age Groups. S. A. Weisman.—p. 87.
Pharmacology of New Drugs Useful in Pediatric Practice. C. H. Thienes.—p. 90.
Vector Potentialities with Respect to Spread of Insect Borne Diseases of Man in California. W. B. Herms.—p. 95.
Relation of Deep Roentgen Therapy to Aero-Otitis Media. Francis O'N. Morris.—p. 100.
Urachal Cysts with Malignant Invasion of Bladder: Three Case Reports. R. J. Prentiss.—p. 103.
*Asphyxial Death Due to Pulmonary Cryptococcosis: Case Report. A. M. Moody.—p. 105.

Penicillin and Sulfonamide Drugs in Acute Hematogenous Osteomyelitis.—Mathews and Hutter present a comparative study of the effectiveness of the sulfonamide compounds alone and of the sulfonamide compounds and penicillin combined in the treatment of 25 cases of hematogenous Staphylococcus aureus osteomyelitis at the Children's Hospital, Los Angeles. The expected mortality rate of penicillin-treated cases of osteomyelitis should be less than 1 per cent; the course of the disease is considerably shortened; the roentgenograms reveal less destruction in these cases and the necessity for surgical intervention and drainage of bone abscesses has been reduced. The authors stress the importance of repeated hemoglobin determinations, red blood cell counts, white blood cell counts and differential counts, urine examinations and blood cultures. Transfusions of 150 to 200 cc. should be given daily or at least once a week, depending on the hemoglobin content. Penicillin should be administered by the intravenous route in doses of 400,000 units daily for the first two days, then in somewhat smaller dosage. Sulfadiazine should be given in amounts to maintain a blood level of about 12 mg. per hundred cubic centimeters of blood. A high dosage may be necessary to secure this blood level. Positive fluid balance with adequate output of urine should be insured by intravenous administration of fluids if necessary. The affected parts should be immobilized and a diet high in vitamins should be provided.

Asphyxial Death Due to Pulmonary Cryptococcosis.—Moody reports the case of a Mexican laborer, aged 38, who was admitted with the probable diagnosis of pulmonary tuberculosis, submiliary type. His chief complaint was shortness of breath of fifteen days' duration. He had lost 13 pounds (5.9 Kg.) in weight during the preceding two months, had started coughing one month before entry and had been bringing up a mucoid sputum with the cough. Three examinations of sputum were made for tubercle bacilli and none was found. Roentgenoscopy suggested a submiliary lesion, possibly tuberculous, and pleuritis with adhesions and fluid at the base of the right lung. Later, obstruction of a major bronchus or a tracheal obstruction was suspected. Bronchoscopic examination disclosed a fungating tumor mass below the larynx. Treatment was largely symptomatic. The patient died on March 24, although nearly 1,000,000 units of penicillin and 390 grains (23.4 Gm.) of sulfadiazine had been given. Sections of cystlike masses and smears of the mucinous material from the bronchi contained many encapsulated organisms characteristic of Cryptococcus neoformans (Torula histolytica). There were additional lesions of cryptococcosis in sections from several different areas of each lung. Areas of silicosis were also demonstrated in sections, but no tuberculosis was found. The organisms (C. neoformans) were numerous and easily demonstrated by direct wet smears mixed with a small amount of india ink. The mucinous capsules of the organisms with their included centrally located yeastlike bodies could be clearly seen.

Connecticut State Medical Journal, Hartford

11:597-712 (Aug.) 1947

Surgical Treatment of Thrombosis in Arteries and Veins of Lower Limbs. J. Homans.—p. 597.
Therapeutic Use and Hazards of Bed Rest. W. Dock.—p. 606.
Early Ambulation in Conjunction with Use of Metallic Suture. J. D. Booth.—p. 609.
Early Ambulation. C. D. Deming.—p. 611.
Early Postoperative Recovery in Suprapubic Prostatectomy. H. A. Levin.—p. 613.
Microcephaly in Three Successive Pregnancies. L. Newton and T. S. McLean Jr.—p. 617.
Minute Nodules and Cysts of a Fallopian Tube: Case Report. M. R. Moore.—p. 619.
Libel Suits of the American Medical Association. M. Fishbein.—p. 621.

Diseases of Chest, Chicago

8:295-422 (July-Aug.) 1947

*Inhalation Therapy in Chronic Bronchial Infections. E. R. Levine.—p. 295.
Routine Chest Roentgenograms of Hospital Admissions. G. N. Scatchard and Diana O. Duszynski.—p. 312.
*Surgical Treatment of Bronchial Adenoma. A. Goldman.—p. 321.
Histoplasmosis—Pathologic and Clinical Findings. J. F. Kuzma.—p. 338.
Critical Study of Pneumoperitoneum and Phrenic Nerve Crush in Pulmonary Tuberculosis. A. Hurst, H. M. Maier and R. Dwork.—p. 345.
Patent Ductus Arteriosus; Present Surgical Status. J. W. Nixon.—p. 360.
Hazards of Bovine Tuberculosis as Matter of Public Health Significance and Potential Human Lung Infections with Bovine Tubercle Bacilli. H. M. O'Rear.—p. 368.

Inhalation Therapy.—Levine treated 42 patients, 26 men and 16 women, of the average age of 50 years, with inhalation of a nebulized solution of penicillin for chronic bronchial infection. The following criteria were used in selection of cases: (*a*) definite bronchographic evidence of bronchiectasis; (*b*) a history which is definitely of this type of infection for a long period of time; (*c*) previous treatment of all the patients by all other methods, including rest in bed, postural drainage, sulfonamide drugs by mouth and penicillin by injection. All of the patients have been followed for at least one year. Symptoms disappeared completely in 19 of the 42 patients; 14 patients showed pronounced improvement in symptoms and general condition and 9 did not present any clinical improvement. Recurrence of symptoms with an entirely new bacterial flora suggesting a new infection was the rule rather than exception. The sensitivity of the organism to penicillin was the more important factor in the determination of the result. The concentration of penicillin per cubic centimeter in the nebulized solution did not appear to be an important factor per se. Inhalation therapy has a definite value in the treatment of bronchial infection while continued medical supervision and customary treatment, including postural drainage, remains an essential element.

Treatment of Bronchial Adenoma.—Bronchial adenoma, according to Goldman, is a slowly growing epithelial tumor which is locally invasive, clinically benign, but apparently capable in rare instances of becoming malignant. According to this concept, patients with bronchial adenoma between the ages of 24 and 48 were treated with pulmonary resection. There was 1 surgical death from infection. Results were satisfactory in the remaining 9 cases and were superior to bronchoscopic removal in treatment of patients with bronchoscopically inaccessible and large tumors, with recurrent tumors following bronchoscopic removal, with distal pulmonary suppuration and with involved mediastinal lymph nodes. No metastases have occurred in any of these 9 patients, although in 3 the tumor was left in the pulmonary stump without apparent spread. With modern preoperative and postoperative care, intratracheal anesthesia and surgical technic for conservation of the upper lobe applicable to adenomas located in a stem bronchus and accomplished by combining lobectomy with bronchotomy, pulmonary resection is the method of choice for the treatment of benign tumors of the lung.

Geriatrics, Minneapolis

2:197-260 (July-Aug.) 1947

Significant Objectives in Management of Cardiac Failure in Elderly Patients. M. M. Odel.—p. 197.
Preclinical Medicine and Geriatrics. M. W. Thewlis.—p. 205.
Nutrition in Cardiovascular Disease. D. C. Peete.—p. 213.
Geriatrics Contacts Old Age Assistance. E. L. Tuohy.—p. 222.
*Geriatrics—Epilepsy in Old Age. Madelaine R. Brown.—p. 231.
Allergy Problems in Elderly Persons. A. M. Fuchs.—p. 235.

Epilepsy in Old Age.—According to Brown epilepsy is thought to be an inherent, inherited abnormality of the nerve cells of the brain or paroxysmal cerebral dysrhythmia. In the absence of cerebral injury, it would seem unlikely that the onset of cerebral dysrhythmia in the aged would be due to age alone. The case histories of the 2 patients presented here would seem to bear this out. One of the patients was a woman, aged 61, and the other was a man, aged 71 when the seizures started. Each had a sibling who had epilepsy. Neither of the patients had retinal arteriosclerosis, hypertension, glandular dysfunction or Stokes-Adams disease. In both patients recent memory had been poor since the onset of convulsions. There were no abnormal neurologic signs or psychotic behavior. The electroencephalogram of 1 patient was normal and that of the other was abnormal only after hyperventilation. The symptoms of idiopathic epilepsy may begin at any age. The probable cause lies in an inherent dysrhythmia of the cerebral nerve cells.

Journal of Gerontology, Springfield, Ill.

2:93-204 (April) 1947

Older People and Their Potentialities for Gainful Employment. N. W. Shock.—p. 93.
Story of Old Age. F. Hinman.—p. 103.
Effect of Age on the Concentration of Chloride and Water in Chick Tissues. J. S. Barlow, J. S. Slinger and J. F. Manery.—p. 110.
Effects of Androsterone, Estradiol, and Thyroid Hormone on Artificial Premature "Climacteric" of Pure Gonadal Origin Produced by Ovariectomy in Rats: III. Effects on Histologic Structure of Vagina, Uterus, Adrenals, and Thyroid. V. Korenchevsky and V. E. Jones.—p. 116.
St. Augustine on the Longevity of the Antediluvians. J. J. Griffin.—p. 137.
Changing Trends in the Care of the Aged. J. Weil.—p. 148.

Journal of International College of Surgeons, Chicago

10:263-358 (May-June) 1947

International Nomenclature and Classification of Neoplasms. W. C. MacCarty.—p. 263.
Supradiaphragmatic Diverticulum of Esophagus Treated by Infradiaphragmatic Diverticulogastrostomy. R W McNealy and J. A. Glassman.—p. 268.
Simple Operative Procedure for Relief of Anginal Pain—New Technic. R. M. Klemme.—p. 272.
Massive Bone Defects in Compound Wounds J. R. Moore.—p. 274.
Enterogenous Cysts with Report of Case Involving Transverse Colon. C. C. McCormick.—p. 287.
Adamantinoma of the Tibia. W. H. Meffley and S. W. Northup.—p. 291.
Cholecystocholedochostomy for Preserving a Functioning Gallbladder. B. O. C. Pribram.—p. 294.
Significance of Multiple Hernias in Inguinofemoral Region. G. E. Perrigard.—p. 301.
Pyloric Obstruction Due to Stenosing Ulcer in the Aged. S. J. Carnazzo. —p. 304.
Anatomy and Embryology of Anus in Relation to Pelvic Floor. C. W. Barrett.—p. 308.
Active Treatment of Acute Thrombophlebitis of Varicose Veins. E. J. Orbach.—p. 318.
Hypernephroma of Thyroid Gland: Case Report. C. E. Boys.—p. 323.
Electrosurgical Therapy of Rectal and Rectosigmoid Cancer without Preliminary *Colostomy*. *H. Bacon.*—p. 341
Cancer and Experimentation. R. C. Ferrari —p. 347.
Evipal Soluble (Barbital Derivative) in Intravenous General Anesthesia in Children's Traumatology. J. de Romana and G. Bacigalupo.—p. 350.
Senile Cataract; Statistics on Last 100 Cases E. Cipriani.—p. 352.

Journal of Lab. and Clinical Medicine, St. Louis

32:807-928 (July) 1947

*Enhancement of Blood Levels by Caronamide During Intramuscular Administration of Penicillin. A. O. Seeler. Clare Wilcox and M. Finland.—p. 807.
*Enhancement of Plasma Penicillin Concentrations by Caronamide and Sodium Benzoate. E. Strauss, P. I. Richburg, P. Z. Saba and E. Alexander.—p. 818.
Water-Soluble Preparation for Prolonging Effective Penicillin Levels in Body Fluids. L. Loewe, H. B. Eiber, Erna Alture-Werber and Mary K. Shore.—p. 832.
Use of Modified Dubos and Davis Medium for Demonstration of Antibiotic Activity of Subtilin Against Mycobacterium Tuberculosis. S. C. Wong, A. S. Hambly Jr. and H. H. Anderson.—p. 837.
Further Observations on Cultivation of Tubercle Bacilli From Pathologic Material in Dubos Media. G. E. Foley p. 842.
Discrepancies in Agglutination Test for Brucellosis as Performed with Various Antigens and Reported from Different Laboratories. C. W. Eisele, N. B. McCullough and Grace A. Beal.—p. 847.
Human Brucella Melitensis Infections in Minnesota with Hogs as Probable Source. P. Kabler, H. Bauer *and* C. B. Nelson.—p. 854.
Diffraction Method of Measuring Red Blood Cells. A. Pijper.—p. 857.
Role of Phagocytosis in Resistance, as Related to Age of Granulocytes Following Primary and Reinfection Studies with Hemolytic Streptococci in Macacus Rhesus. S. Saslaw and C. A. Doan.—p. 878.
Outbreak of *Diarrheal Disease* Associated with *Paracolon*. H. F. R. Plass.—p. 886.
Effect of Rate of Administration *of Amino* Acid Preparations and Blood Amino Acid Nitrogen Level on Production of Nausea and Vomiting. C. J. Smyth, A. G. Lasichak and S. Levey.—p. 889.
Study of New Sedative Hypnotic Drug (3,3-Diethyl-2,4-Dioxotetrahydropyridine). S. C. Freed.—p. 895.

Enhancement of Blood Levels of Penicillin by Caronamide.—Beyer reported that the excretion of penicillin could be inhibited by 4′-carboxyphenylmethanesulfonanilide, a compound called caronamide. Seeler and his co-workers administered caronamide orally to patients over 60 years of age in doses of 2 Gm. every four hours and noted an enhancement of the plasma penicillin levels resulting from the intramuscular administration of 100,000 units of penicillin every eight hours. It was necessary to increase the caronamide dosage to 4 Gm. every four hours to produce a similar effect in younger persons. The penicillin blood levels following intramuscular administration of 100,000 units of penicillin every eight hours to patients receiving approximately minimal effective oral doses of caronamide were significantly higher than those obtained by giving 300,000 units of penicillin alone to similar subjects.

Caronamide and Sodium Benzoate for Enhancement of Penicillin Concentrations.—Strauss and his co-workers studied the effectiveness of caronamide (4′-carboxyphenylmethanesulfonanilide) in enhancing the plasma penicillin concentration in 35 adult subjects. The effect was compared with that of sodium benzoate. The only toxic effects of caronamide were nausea and mild diarrhea in a few persons. When 100,000 units of penicillin were given by mouth concurrently with caronamide, a twofold or greater increase in plasma penicillin concentrations were observed in 80 per cent of the blood samples and a fourfold or greater increase in 40 per cent of the samples. This enhancement of the plasma penicillin concentration was maintained for two hours but not for three hours after each dose of penicillin. The concurrent oral administration of caronamide in subjects who received 25,000 and 50,000 units of penicillin intramuscularly likewise resulted in twofold to eightfold increases in plasma penicillin concentrations in most instances. The effects of caronamide were variable when penicillin was injected in peanut oil and beeswax, but plasma penicillin concentrations were in the majority of instances increased. Caronamide had no effect on the plasma concentration of streptomycin when the latter substance was administered in multiple intramuscular injections. In general sodium benzoate was as effective as caronamide in increasing plasma penicillin concentrations when penicillin was given by mouth or by intramuscular injection. The ingestion of both sodium benzoate and caronamide by subjects receiving penicillin by mouth resulted in a greater enhancement of plasma penicillin concentration than was effected by either of these agents alone.

Journal of Mount Sinai Hospital, New York

14:71-132 (July-Aug.) 1947

The Artificial Kidney, W. J. Kolff.—p. 71.
Advances in Knowledge of Vitamins. G. R. Cowgill.—p. 80.
Fenestration for Otosclerosis. S. Rosen.—p. 98.
Parahypophyseal Embryonal Residues: Brief Note. P. F. L. Becker. —p. 104.
Venous Thrombosis and Peripheral Pulmonary Embolization. I. Diagnosis of Venous Thrombosis in Lower Extremities: Introduction. H. Neuhof.—p. 110.
Essays on Biology of Disease. E. Moschcowitz.—p. 122.

Journal of Nat. Cancer Inst., Washington, D. C.

7:425-466 (June) 1947

Characterization of Tissue Metabolism of Transplanted Mouse Melanomas by High Oxidative Response to Paraphenylenediamine. D. Burk, *G. H. Algire, Marie L. Hesselbach, Clara E. Fischer and Frances Y.* Legallais.—p. 425.
Further Studies on Response of Strain A Female Mice to Small Amounts of *o*-Aminoazotoluene. H. B. Andervont.—p. 431.
Acceleration of Enzymatic Desamidation of Glutamine by Several Inorganic Anions. C. E. Carter and J. P. Greenstein.—p. 433.
Effects of Acidity and of Heating on Capacity of Rat Liver Extracts to Desamidate Glutamine and Asparagine. M. Errera and J. P. Greenstein.—p. 437.
Enzymatic Hydrolysis of Acetyldehydroalanine. J. M. Goncalves, V. E. Price and J. P. Greenstein.—p. 443.
Studies on Agent of Chicken Tumor I. I. Relative Potencies of Serial Extracts and Comparative Values as Source Materials for Purification Studies. W. R. Bryan, V. T. Riley, D. G. Deihl and Virginia Voorhees.—p. 447.
Effect of Castration and Sex Hormones on Induction of Tumors in Mice with *o*-Aminoazotoluene. H. B. Andervont and Thelma B. Dunn. —p. 455.
Relationship Between Lethal Yellow (A^y) Gene of Mouse and Susceptibility to Spontaneous Pulmonary Tumors. W. E. Heston and Margaret K. Deringer.—p. 463.

Journal of Neurosurgery, Springfield, Ill.

4:299-402 (July) 1947

**Replacement of Free Bone Plates in Routine Craniotomies.* B. S. Ray and H. Parsons.—p. 299.
*Ectopic Pinealomas in Chiasmal Region: Report of 3 Cases. G. Horrax and J. P. Wyatt.—p. 309.
Parasagittal Meningiomas. H. Olivecrona.—p. 327.
Hemifacial Spasm: Note on Etiology in Two Cases. E. Campbell and C. Keedy.—p. 342.
Some Additional Electroencephalographic Technics for Localization of Intracranial Lesions. B. K. Bagchi and R. C. Bassett.—p. 348.
Convulsive Effects of Streptomycin Topically Applied to Cerebral Cortex. H. M. Suckle, R. R. Liebenow and O. S. Orth.—p. 370.

Replacement of Free Bone Plates in Craniotomies.—Ray and Parsons think that the routine use of free bone plates, *completely separated from* dura, pericranium and muscle, and their replacement in the ordinary craniotomy have not been thoroughly evaluated. They began several years ago to replace revised free bone plates in cases in which the skull was involved by tumors such as osteomas and meningiomas and in which discarded bone would have left unsightly defects. They draw the following conclusions from the study of 100 consecutive cases in which there has been immediate or delayed replacement of untreated or boiled cranial bone plates: 1. The use of free bone plates in routine craniotomies has technical advantages over the use of the classical osteoplastic flap. 2. The survival of the free bone plate that is normal and immediately replaced compares favorably with that of the bone in the osteoplastic flap. 3. There is no greater incidence of infection than in the osteoplastic flap. 4. Postoperative bleeding from the bone plate is eliminated. 5. Boiling the bone plate does not significantly increase its tendency to atrophy provided that it is replaced immediately. 6. The delayed replacement of boiled bone should be avoided, since it is accompanied by an increased tendency for wound infection and atrophy of the bone. 7. Tumor tissue in the bone plate can be killed by boiling but plates extensively invaded by tumor do not survive well when boiled and replaced.

Ectopic Pinealomas in Chiasmal Region.—Horrax and Wyatt report 3 cases of so-called ectopic pinealomas in the chiasmal region. All 3 patients were Jewish boys between 12 and 19 years of age. In 2 of the patients a primary pinealoma in the pineal region was present and verified microscopically. In 1 of these patients the chiasmal growth was shown to have come by direct extension from the pineal tumor through the wall of the third ventricle; in the other, such an extension was presumed but could not be verified. In the third patient there has never been any clinical evidence of a primary tumor in the pineal region. In 2 of the patients diabetes insipidus was the outstanding clinical complaint. The chiasmal tumor was removed radically at operation in 2 instances, and 1 patient is alive and well after four and one-half years. In view of Dorothy Russell's thesis that ectopic pinealomas are in reality teratomas, serial studies on the material available were carried out in these 3 cases, but in only 1 was there any suggestion of a teratomatous origin, and here the visual proof was not conclusive. The other 2 cases are classical pinealomas from the histologic aspect, with the first case showing regional spread to the pituitary and hypothalamic regions.

Journal of Pediatrics, St. Louis

31:131-250 (Aug.) 1947

Ulcerated Urethral Meatus in Male Children. P. Freud.—p. 131.
Sex Precocity and the Adrenogenital Syndrome. B. Bergman.—p. 142.
Serum Precipitable Iodines in Recognition of Cretinism and in Control of Thyroid Medication. E. B. Man, C. S. Culotta, Dorothy A. Siegfried and C. Stilson.—p. 154.
Determination of Status and Progress in Children with Nutritive Failure. A. W. Mann, S. Dreizen and T. D. Spies.—p. 161.
Further Observations on Post-Tracheotomy, Mediastinal Emphysema, and Pneumothorax. G. B. Forbes, G. Salmon and J. C. Herweg.—p. 172.
A Study of the Absorption and Excretion of Oral Penicillin in Children. M. Markowitz and A. G. Kuttner.—p. 195.
Self-Demand Feeding and Indulgence in Early Infancy. G. F. Weinfeld. —p. 203.
Method of Holding the Head for Scalp Vein Transfusions and Restraining the Legs for Intravenous Therapy. P. H. Spohn and T. Statten. —p. 207.

Kansas Medical Society Journal, Topeka

48:309-352 (July) 1947

Irritable Bowel Syndrome. P. W. Brown.—p. 309.
Diagnosis and Management of Early Simple Glaucoma. S. J. Meyer. —p. 312.
Management of Tinea Capitis. W. H. Fritzemeier.—p. 317.

48:353-392 (Aug.) 1947

Changing Concepts in Medicine and Effect upon Medical Education. K. Menninger.—p. 353.
Congenital Absence of the Fibula. C. B. Trees.—p. 355.
Clinical Manifestations of Carcinoma of the Pancreas: Review of Literature and Review of 16 Cases. F. A. Rieke.—p. 359.

Kentucky Medical Journal, Bowling Green

45:217-262 (July) 1947

Meningococcal Infections. C. A. Fish.—p. 220.
Intravenous Anesthesia with Pentothal Sodium. E. H. Baker.—p. 227.
Obesity: Causes, Effects, and Clinical Management. R. H. Barr. —p. 231.

SYMPOSIUM ON RHEUMATIC DISEASES

Rheumatic Diseases, Etiologic Aspects. M. H. Thompson.—p. 236.
Rheumatic Diseases, Diagnostic Aspects. G. S. Buttorff.—p. 242.
Therapeutic Considerations of the Rheumatic Diseases. A: C. McCarty. —p. 246.

45:263-296 (Aug.) 1947

Less Painful Hemorrhoidectomy. D. M. Clardy.—p. 274.
Changing Trends in Surgical Treatment of Peptic Ulcer. C. C. Johnston.—p. 277.
The Mahaffey Family. L. H. South.—p. 281.
Modern Treatment of Diabetes Mellitus. C. Morse.—p. 285.
Rectal Foreign Bodies: Unusual Case Report of Foreign Body in Rectum and Sigmoid. M. A. Lucas and J. E. Ryan.—p. 289.

Minnesota Medicine, St. Paul

30:729-759 (July) 1947

*Acute Poliomyelitis in Pregnancy: Report of 30 Cases. M. E. Baker and Ilene Godfrey Baker.—p. 729.
Review of 174 Cases of Cancer with Necropsies. H. H. Joffe and A. H. Wells.—p. 735.
General Principles in the Treatment of Peptic Ulcer. J. M. Ryan. —p. 742.
*Congenital Diaphragm of Duodenum: Case Report with Preoperative X-Ray Studies. W. I. Nelson.—p. 745.
Minnesota Multiphasic Personality Inventory: Evaluation of its Use in Private Practice. A. E. Walch and R. A. Schneider.—p. 753.
Reconstruction of the Extrahepatic Bile Duct: Modification of the Allen Method. C. E. Rea.—p. 759.

Acute Poliomyelitis in Pregnancy.—The Bakers say that during the Minnesota poliomyelitis epidemic in the summer of 1946, 695 patients with acute poliomyelitis were admitted to the Minneapolis General Hospital. Of this group, 115 were women of child-bearing age, 30 of whom were pregnant. The ages of the pregnant women varied between 17 and 32 years. Stages of gestation at the time of admission varied between six weeks and nine lunar months. Fifteen live babies had been delivered by March 15, 1947. Seven spontaneous abortions and 6 deaths occurred among the 30 pregnant patients. The authors conclude that poliomyelitis occurs in the pregnant woman more frequently than can be attributed to mere chance. In general pregnancy has little influence on the course of poliomyelitis or the extent of paralysis. There is a relatively high percentage of abortion (30.4 per cent) among pregnant patients with poliomyelitis. This study produced no evidence to show that the fetus can or cannot contract poliomyelitis in utero.

Congenital Diaphragm of Duodenum.—According to Nelson congenital diaphragm of the duodenum is a developmental anomaly in which a membrane formed by an infolding of the mucosa and submucosa extends across the lumen of the duodenum. The diaphragm may be complete or it may present an aperture. Cases of a duodenal diaphragm without an aperture are instances of congenital high intestinal obstruction. Unless the obstructions are recognized and successfully operated on, the infants die during the first few days of life. Those with small apertures in the diaphragm may have no symptoms, but they are potential candidates for complete obstruction. Nelson found 35 cases of congenital diaphragm of the duodenum reported in the literature, only 6 of which were recognized during life; of these, 5 were cured. He reports the case of a woman aged 26 in whom roentgenologic studies permitted the preoperative diagnosis. The patient was cured by resection of the duodenal diaphragm. Dilatation of the proximal duodenum demonstrable by roentgen ray has been reported in this condition by others. The roentgenograms of the author's case showed clearly a congenital diaphragm forming a sacculation within the duodenum. Duodenotomy and excision of the membrane is advocated rather than short-circuiting procedures.

New England Journal of Medicine, Boston

237:111-140 (July 24) 1947

*Recurrent Cancer of the Colon and Rectum: Report of Cases with Favorable Results Following Radical Surgery. J. E. Dunphy.—p. 111.
*Infectious Hepatitis Associated with Pregnancy: Report of Four Cases. R. Martin and F. C. Ferguson Jr.—p. 114.
Meckel's Diverticulum: Report of 2 Unusual Cases. W. R. Moses. —p. 118.
Electroencephalograms in Neuropsychiatric Disorders Among Soldiers: Results in 950 Cases. M. H. Kibbe.—p. 122.
Endoscopy. E. B. Benedict.—p. 126.
Pulmonary Emboli, Multiple, Old and Fresh Infarcts of Lung.—p. 132.
Mesenteric-Artery Embolism.—p. 135.

Radical Surgery in Recurrent Cancer of Colon.—Dunphy maintains that since surgical intervention is the only way to treat cancer of the colon initially, it should be employed whenever possible in dealing with recurrences. If there is no positive evidence of distant metastases or generalized peritoneal seeding, reoperation should be considered regardless of the extent of the first operation, the histologic character of the growth or the apparent fixation of the recurrence. He reports 4 cases selected as examples of what may be accomplished by a second attempt at extirpation of carcinomas of the colon and rectum that have recurred locally. Gratifyingly long periods of arrest may follow such operations.

Infectious Hepatitis Associated with Pregnancy.—According to Martin and Ferguson an epidemic of infectious hepatitis began among the civilian population of Portland, Maine, during 1944 and has continued to date. Four cases occurred in pregnant women. No definite conclusions can be drawn from this small series. The danger of maternal death from hepatitis is small. The chance of an uneventful pregnancy is poor, and there is a possibility of prolonged jaundice and perhaps permanent hepatic damage in the mother. Improvement in the mother occurred soon after the cesarean section in case 1 and soon after delivery in case 2. It appears that the mother benefits from removal of the fetus. Pregnancy itself may place an extra strain on an already diseased liver. Interruption of the pregnancy should be seriously considered in severe cases of hepatitis unless the patient improves rapidly under observation. Little other treatment will benefit, since treatment in infectious hepatitis has always been purely symptomatic.

New Orleans Medical and Surgical Journal

100:1-52 (July) 1947

Determination of Serum and Urine Salicyl Levels During Treatment with Salicyl Drugs. J. T. Peters.—p. 1

Sternal Marrow in Health and Disease. P Pizzolato.—p. 3.

"Borrowing-Lending" Hemodynamic Phenomenon (Hemometakinesia) and Its Therapeutic Application in Peripheral Vascular Disturbances. T. Ray, G. E. Burch and M. E. DeBakey —p. 6.

Treatment of Uterine Prolapse. R. A. Kimbrough.—p. 16.

Sigmoid Sinus Thrombosis: Report of Case J. B. Farrior and W. W. Hart.—p. 20.

Facial Nerve Paralysis Resulting from Fracture of Temporal Bone: Report of Case. J. B. Farrior and P. C. Caldwell.—p. 23.

Survey of General and Ovarian Sterility with Special Reference to Anovulation. S. B. Stickney.—p. 26.

Occupational Medicine, Chicago

3:435-530 (May) 1947

Health Education in Industrial Health. B. Gebhard.—p. 435.

Industrial Selenosis: Review of the Literature, Report of 5 Cases and a General Bibliography. R. F. Buchan.—p. 439.

Schedule Losses and Listed Disabilities: Plea for Revision of Compensation Laws. S. Kahn.—p. 457.

Industrial Medicine in Japan. J. S. Felton.—p. 465.

Fractures of Foot. J. S. Barr.—p. 497.

Rehabilitation of Amputee. H. H. Kessler.—p. 502.

Physiological Reviews, Baltimore

27:335-510 (July) 1947

Biologic Significance of Hyaluronic Acid and Hyaluronidase. K. Meyer. —p. 335.

*Pathogenetic Factors and Pathologic Consequences of Decompression Sickness. H. R. Catchpole and I. Gersh.—p. 360.

Genesis of Electrocardiogram. L. N. Katz.—p. 398.

Intercellular Cement and Capillary Permeability. R. Chambers and B. W. Zweifach.—p. 436.

Physiologic Effects of Curare and Their Application to Clinical Medicine. A. R. McIntyre.—p. 464.

Urinary Coproporphyrines in Health and Disease. C. J. Watson and E. A. Larson.—p. 478.

Decompression Sickness.—Catchpole and Gersh demonstrate that the evidence is overwhelming that gas bubbles are the primary pathogenetic agent in decompression sickness. Whether they occur after decompression from high pressure atmospheres or to altitude, gas bubbles are chiefly intravascular and are held to be responsible for nearly all important phases of the syndrome of decompression sickness. Extravascular gas bubbles occur also in certain severe instances of decompression from high pressure atmospheres, but they are restricted to certain lipid-rich structures. The pathologic effects may be vastly greater after decompression from high pressure atmospheres than to altitude.

Tennessee State Medical Assn. Journal, Nashville

40:241-278 (Aug.) 1947

Surgical Treatment of Localized Epilepsy. C. Pilcher.—p. 241.

Training for Registered Practical Nurses. W. A. Seeley.—p. 245.

Clinical Aspects of Rh Factor. D. C. Seward.—p. 247.

Most Advanced Phases in Treatment and Especially Diagnosis of Tuberculosis. J. B. Naive.—p. 253.

Pulmonary Moniliasis Treated with Penicillin. B. M. Zussman.—p. 258.

Unique Heart Tetralogy with Palindromic Rheumatism. D. Scheinberg. —p. 260.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Edinburgh Medical Journal

54:269-332 (June) 1947

Growth in Relation to Maturity. R. W. B. Ellis.—p. 269.

Chemotherapy of Benign Tertian Malaria. J. Innes.—p. 284.

Use of Ergot for Induction of Labor and for Third Stage of Labor. W. D. A. Callam.—p. 296.

Blood Changes in the Aged. O. Olbrich.—p. 306.

Bronchial Occlusion in Childhood Tuberculosis: Pathogenesis and Effects. J. H. Hutchison.—p. 322.

Jour. Obst. & Gynaec. of Brit. Empire, Manchester

54:281-416 (June) 1947

Relation Between Results of ABO and Rh Tests and Clinical Condition of 2,000 Mothers and Infants. Kathleen E. Boorman, Doreen Daley and Barbara E. Dodd.—p. 281.

Studies in Prematurity, Stillbirth and Neonatal Death: Part. I. Factors Affecting Birth-Weight and Outcome. Cecil Mary Drillien.—p. 300.

Influence of Semen on Female Reproductive Organs. V. B. Green-Armytage, F. Silberstein and G. E. Wachtel.—p. 324.

Rh Factor in Obstetrics. A. Sadowsky, A. Brzezinski and Z. Polishuk. —p. 340.

Cause of Polar Lie. F. Stabler.—p. 345.

Central Rupture of the Perineum: Report of a Case with Review of Literature. Josephine Barnes.—p. 351.

Rupture of Rectus Abdominis Muscle During Pregnancy. G. S. Adam. —p. 358.

Uncommon Sequel of Secondary Rupture of Uterus. W. F. Flint. —p. 363.

Effect of Estrogen (Stilbestrol) on Formed Elements of Blood in Women. K. J. Karnaky.—p. 366.

Familial Incidence of Adrenal Hypertrophy and Female Pseudohermaphroditism. Rosemary Biggs and Elizabeth Rose.—p. 369.

*Fatal Case of Primary Diphtheria of the Cervix and Urethra. Janet Bottomley and D. R. Christie.—p. 375.

Hematometra Caused by Disappearance of the Cervial Canal After Labour. H. S. Allen.—p. 377.

Fetal Brain Tumour as Cause of Dystocia. J. Baxter.—p. 380.

A Case of Serous Adenofibroma of Ovary. A. Sharman and A. M. Sutherland.—p. 382.

Fatal Case of Primary Diphtheria of Cervix and Urethra.—Bottomley and Christie report the case of a woman who two days before admission to the hospital had an illness of influenza type, with a temperature of 104 F. Her last menstrual period began eight days before admission and had been normal until the onset of her illness. She was tender in both iliac fossae. Bacteriologic examination revealed Corynebacterium diphtheriae mitis in cervix and urethra. Antidiphtheritic serum was started, as well as intramuscular administration of penicillin, but polyneuritis and myocarditis were evidently already present when treatment was started. After treatment, clearance swabs from the cervix were negative, but the patient's general condition deteriorated. The myocarditis progressed. The patient had a vagal block attack and died. At the time of the diagnosis of diphtheria the patient was questioned as to possible contacts. She stated that her betrothed had shared a cell with a man who had diphtheria. The route of infection in a primary case of genital diphtheria is a matter for speculation, but it appears possible that it may sometimes be transmitted by sexual intercourse.

Journal of Physiology, Cambridge

106:237-377 (July 31) 1947. **Partial Index**

*Creatinine Losses in Sweat During Work in Hot Humid Environments. W. S. S. Ladell.—p. 237.

Reflex Vasodilatation in Human Skeletal Muscle in Response to Heating the Body. H. Barcroft, W. McK. Bonnar and O. G. Edholm.—p. 271.

Survival of Transplanted Embryo Bone Grafted to Chorioallantoic Membrane, and Subsequent Osteogenesis. N. M. Hancox.—p. 279.

Mechanical and Structural Properties of Bone in Rats on a Rachitogenic Diet. G. H. Bell, J. W. Chambers and I. M. Dawson.—p. 286.

Normal Visual (Rod) Field of the Dark-Adapted Eye. Ida Mann and F. W. Sharpley.—p. 301.

Membrane Resistance of a Non-Medullated Nerve Fibre. A. L. Hodgkin. —p. 305.

Effect of Change of Brightness Level upon the Foveal Luminosity Curve Measured with Small Fields. L. C. Thomson.—p. 368.

Creatinine Losses in Hot Humid Environments.—Ladell found that whereas the creatinine contents of both the saliva and the blood increase threefold after a dose of 5 Gm. of creatinine, there is only a slight increase in the creatinine content of the sweat. The creatinine of the sweat appears to be more closely linked with the rate of sweating than with the level of creatinine in the blood; thus the slower the rate of sweating the greater the creatinine content. This reciprocal relationship between creatinine content and sweat rate is the opposite of what has been observed for chloride concentration. There appear to be two mechanisms involved in the production of sweat from body fluids. Mosher's suggestion that there is an essential similarity between sweat and urine may be correct, but the fact that the creatinine content of the sweat is little affected by that of the blood, whereas the urinary creatinine is greatly affected, indicates that the production of the two fluids must be different.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

91:1685-1764 (June 28) 1947. Partial Index

Albright's Disease (Osteitis Fibrosa Cystica). F. E. Revers.—p. 1695.

*Reduction of Serum Potassium Content with Manifestations of Generalized Muscular Weakness and a Cardiovascular Syndrome During Treatment of Diabetic Coma. M. Frenkel, J. Groen and A. F. Willebrands.—p. 1704.

*Mud Fever. J. H. Bekker and T. S. J. A. Bonga.—p. 1713.

Reduction of Serum Potassium Content with Generalized Muscular Weakness During Diabetic Coma.—While treating a patient with severe diabetic coma with large quantities of insulin, water, dextrose, sodium chloride and sodium bicarbonate, Frenkel and his associates observed muscular weakness, partial respiratory paralysis, water hammer pulse with irregular rhythm, increased pulse pressure, cardiac dilatation with a systolic murmur and increased venous pressure. The serum potassium level, which had been normal on admission, decreased to 6.9 mg. per hundred cubic centimeters. The symptoms disappeared after administration of potassium. The authors consider this syndrome an expression of general muscular insufficiency as a result of potassium depletion. They discuss the mechanism which causes this decrease in serum potassium and emphasize the importance of recognizing this dangerous condition in the treatment of diabetic coma.

Mud Fever.—Bekker and Bonga review the history of mud fever in the Netherlands and report clinical histories of 2 farmers who contracted this form of leptospirosis. It was found that the burrowing mice (voles) which infested the ground on the farms were infected with Leptospira grippotyphosa.

Nordisk Medicin, Gothenburg

34:1241-1284 (May 30) 1947. Partial Index

Studies on Anesthesia in U. S. A. O. Friberg.—p. 1241.

Hospitalstidende

Renal Reabsorption of Glucose. Agnete Bræstrup.—p. 1249.

Norsk Magasin for Lægevidenskapen

Transient Lung Infiltrations with Eosinophilia: Case with Marked Tendency to Recurrence. K. Bie.—p. 1253.

Tuberculous Pleurisy. C. M. Sinding-Larsen and O. Heldaas.—p. 1255.

Two Staphylococcus Aureus Strains Resistant to Penicillin. L. O. Borgen.—p. 1259.

Medicinsk Revue

*Primary Dysmenorrhea Treated with Dilation of Neck of Uterus and with Sympathectomy: After-Examination of 195 Patients. K. Knutsen. —p. 1261.

Hygiea

Asphyxia in New-Born. Y. Åkerrén.—p. 1269.

Primary Dysmenorrhea Treated with Dilation of Neck of Uterus and with Sympathectomy.—Knutsen states that dilation of the neck of the uterus with Løvset's dilator is safe. Good results were obtained for over a year in about 50 per cent of the 125 patients treated; eliminating as far as possible the effect of pregnancy on the dysmenorrhea, the results were good in 46 per cent. They were about the same in patients with infantile uterus and with uterus of normal size. Resection of the superior hypogastric plexus is accompanied by the same risk as other laparotomies and should be carried out only in grave and stubborn cases of primary dysmenorrhea in which other safe methods of treatment, particularly dilation of the cervix, have been tried or in which laparotomy is indicated for other reasons. Typical uterine dysmenorrhea lends itself to this treatment. Of 75 patients treated by this method 1 died postoperatively. Of the 70 followed up, sympathectomy alone was done in 44 and sympathectomy with correction of minor pelvic abnormalities in 26, with good results in 84 and 92 per cent, respectively. The failures are attributed to incomplete resection. Examination of the resected tissue should be made; while the presence of nervous tissue does not guarantee complete resection, its absence indicates the need for further resection. Pregnancy and delivery are not unfavorably affected by the resection.

Practitioner, London

159:1-82 (July) 1947. Partial Index

Breech Presentations. A. Brews.—p. 11.

Placenta Previa. T. N. A. Jeffcoate.—p. 15.

The Puerperium. J. H. Peel.—p. 29.

Care of the Newborn. F. M. B. Allen.—p. 33.

Heat Spots and Summer Eruptions. J. T. Ingram.—p. 44.

Semaine des Hôpitaux de Paris

23:1601-1636 (July 7) 1947

*Puncture of Spleen and Punctures of Various Hematopoietic Centers in Study of Splenomegaly from Medical and Surgical Point of View. P. E. Weil and Suzanne Perlès.—p. 1601.

*Rupture of Lymph Nodes Into Trachea and Into Bronchi. L. Justin-Besançon, M. Lamy, Miss M. L. Jammet, J. M. Lemoine and P. Y. Paley.—p. 1602.

Vitamin A and Hypervitaminosis D. Suzanne Dreyfus-Neumann. —p. 1617.

Puncture of Spleen and Coupled Punctures.—According to Weil and Perlès splenopathy is not always associated with definite alterations in the blood and the bone marrow. In such cases punctures of the spleen, the liver and the bone marrow will be of considerable aid in diagnosis. There are other cases for which the term cryptopathology of the spleen has been suggested, such as lymphatic leukosis with a normal or subnormal blood picture, or rare cases of myelogenous leukosis without changes in the blood. Splenic puncture will be of definite help and other punctures will reveal whether or not the liver and the bone marrow are taking part in the neoplasia. Splenic puncture may clarify the diagnosis in cases of chronic cryptoerythroblastosis. In Gaucher's and in Niemann-Pick's disease puncture of the liver and the bone marrow may reveal involvement of their parenchyma with tumor cells. Combined punctures in splenomegaly associated with kala-azar and malaria demonstrate that disease of the spleen presents only one aspect of a more important involvement of the reticuloendothelial system. Splenic puncture will help the surgeon to decide whether or not splenectomy is indicated. Twenty-four hours of rest in bed with ice applied to the abdomen should always precede splenic or hepatic puncture. Combined subcutaneous injections of epinephrine and ephedrine five minutes before the puncture are recommended for patients with a mild tendency to hemorrhage and additional subcutaneous injections of 5 to 10 cc. of blood to patients in whom this tendency is more definite. To prevent severe unexpected hemorrhage, splenic puncture should be adopted in addition to coagulation tests as a routine measure.

Lymph Nodes Perforating Into Trachea and Bronchi.—According to Justin-Besançon and his co-workers bronchoscopic examination has demonstrated that tuberculous lymph nodes may perforate into the trachea and the bronchi and that the consequence of such perforation may often be less grave than was formerly believed. Perforation of primary infection of the lymph nodes in children and in adults must be distinguished from that of adenopathy due to reinfection or calcification of lymph nodes. These conditions differ from one another with regard to prognosis, manifestations and incidence. Dissemination over the subjacent pulmonary parenchyma is the principal danger associated with perforation of lymph nodes. Its occurrence is far from being a rule. It is usually associated with deposition of liquid caseous material which contains a large number of Koch's bacilli. Fatal hemoptysis may occur in adults from perforation of lymph nodes into a bronchus with an adherent diverticulum of the esophagus or from ulceration into large mediastinal vessels. The passage of small concretions from the calcified lymph nodes into the trachea and the bronchi as the cause of mild and unspecific inflammatory changes should be taken into consideration to avoid an erroneous diagnosis of bronchopulmonary suppuration or cancer of the lungs.

Book Notices

Recent Advances in Clinical Pathology. By Various Authors. General Editor: S. C. Dyke, D.M., F.R.C.P. Section Editors: Bacteriology, R. Cruickshank, M.D., F.R.C.P.; Biochemistry, E. N. Allott, B.Sc., B.M., B.Ch.; Haematology and Cytology, B. L. Della Vida, M.D.; Histology, A. H. T. Robb-Smith, M.D. Produced Under the Auspices of the European Association of Clinical Pathologists. Fabrikoid. Price, $5.50. Pp. 468, with 53 illustrations. Blakiston Company, 1012 Walnut St., Philadelphia 5; Spottiswoode, Ballantyne & Co., Ltd., 1 New-Street Sq., London, E. C. 4, [1947].

This volume is a collaborative effort of forty-one pathologists, mostly British, some from various European countries who found refuge in England from persecution in their native lands. Dyke, the editor, pays tribute to these refugees for their contributions to building up the British service in clinical pathology during the war. The gathering of pathologists from the entire continent led to the formation of the European Association of Clinical Pathologists. When the time seemed near that those who came from abroad might be able to return to their homes, the publication of this book was decided to put on record "the present state in Great Britain of the knowledge and practice of Clinical Pathology." The text is divided into four main sections: bacteriology, biochemistry, hematology and cytology, and histology. Each of the chapters deals with subjects in which important recent advances have been made. They include enteric infections, typhus fever, sore throat, primary atypical pneumonia, pertussis, tuberculosis, brucellosis, anaerobic, staphylococcic, leptospiral and venereal infections, classification of streptococci, laboratory control of chemotherapy, liver function tests, prothrombin time, gastrointestinal diseases, Addison's disease, nutritional deficiencies, sulfonamides, photoelectric colorimeters, and micromethods of blood analysis, hematologic nomenclature, the myelogram, sedimentation rate, pernicious anemia, semen, sputum, pleural fluid, aspiration biopsy, cell counts in serial biopsies of carcinoma, biopsy of lymph nodes, testes, endometrium, skin and peripheral nerves, wet film technic in neurosurgery, clinical and postmortem pathology of encephalitis, and modern histologic technics. Each chapter is a separate and independent unit. The presentation is lucid. Dr. Dyke is to be complimented for a fine editorial job, not an easy accomplishment in view of the heterogeneity of material in a small volume dealing with forty-one subjects by the same number of authors. Physicians in all specialties will find in this book a great deal of valuable information.

Medical Jurisprudence. By W. F. Rhode, B.A., M.B., Ch.B., Government Pathologist, Union Health Department, Cape Town, I. Gordon, M.B., Ch.B., Senior Assistant Government Pathologist, Union Health Department, Cape Town, and R. Turner, M.B., Ch.B., D.P.H., Special Serologist, Union Health Department, Cape Town. With additional contributions by Prof. M. R. Drennan and others. Foreword by the Hon. Mr. Justice H. S. Van Zijl. Second edition. Cloth. Price, 32s. 6d. Pp. 512, with 77 illustrations. Cape Town: Published for the Post-Graduate Press by the Stewart Printing Co. (Pty.) Ltd., 194.

This edition of a book first published in 1942 deals with medical jurisprudence in South African criminal law. It is designed to serve as a practical manual to students, district surgeons and others of that country concerned with medicolegal problems. The authors have collected in it the statutory provisions which are of especial importance to medical practitioners. Several new chapters have been added in this edition, including one on identity, one on the medicolegal aspects of mental illness and another on the medicolegal aspects of workmen's compensation. New sections have also been added relating to the constitution and functions of the South African Medical Council, the registration and certification of births and deaths, and the keeping and sale of poisons and habit forming drugs.

Home Guidance for Young Children: A Parents' Handbook. By Grace Langdon [Grace Langdon Ackerman]. Second edition. Cloth. Price, $4. Pp. 357, with illustrations. John Day Co., Inc., 11 6th Ave., New York 13, 1946.

This complete revision of the edition published in 1931 is intended primarily as a handbook and reference for parents on the care and training of the infant and young child. All aspects of the child's growth and development are treated in detail. The material is divided into nine basic units, including the prenatal period, the first twelve or fifteen months, eating, sleep and rest, toileting, play, living with other people, school days and summary. Each topic is divided into sections dealing with the common problems encountered in the guidance of children. A list of suggested references at the end of each chapter provides for supplementary reading. Practical suggestions for preventing difficulties which may be associated with child development are offered and methods of dealing with those that do occur are described. All the activities of the child are regarded as a part of learning, with emphasis placed on intelligent utilization of the child's experiences to promote normal social, physical and mental growth. While not discarding time tested information, a sensible point of view in relation to implications which may be drawn from recent studies in child growth and development is presented. The author points out that reasonable parents will be honest and positive in their approach to the problems of their children. They will enjoy parenthood through careful study of the child as an individual who deserves real respect as well as love and security. The book is essentially of manual type with a style not unlike that of college textbooks. It is well organized and printed but could with profit include more of the excellent illustrations found in the section on "the first twelve or fifteen months."

P-Q-R-S-T: A Guide to Electrocardiogram Interpretation. By Joseph E. F. Riseman, M.D., Associate in Medicine, Harvard Medical School, Boston, Massachusetts. Second edition. Cloth. Price, $3.50. Pp. 84, with 31 illustrations. Macmillan Company, 60 Fifth Ave., New York 11, 1947.

The demand for a simple presentation of electrocardiography suitable for the beginner has led to the publication of a number of compends. The present volume, which has gone into a second edition within three years, is among the best. Of course it has all the faults, as the author recognizes, that come with an attempt to condense a large mass of data into a small space. The text is illustrated with diagrams, some of which are inaccurate, e. g. that on auricular flutter on page 19, that on digitalis T waves on page 41 and the chest lead of left and right heart strain on page 55. It is regrettable that the author suggests that the electrocardiogram may be taken on a seated patient. It is an error to consider that an ST depression of any extent in the chest leads is normal; it is also an error to consider that premature beats of the sinus node are frequent and that the voltage of T is significantly influenced by the strength of the heart beat. The illustrative electrocardiograms used at the end of the text lose some of their value because of their sharp reduction. Case 16A is an instance of almost complete auriculoventricular block and shows no premature systoles. This record is much too complex for an introductory textbook. The term "slight bundle branch block," as stated for example in case 9, is not to be recommended. It is regrettable that the author does not promulgate the use of multiple chest leads to a greater extent. It appears that he has much less experience with them than with the limb leads. Several features are to be commended, viz. the glossary at the end, the hints on errors which might readily occur in taking electrocardiograms and the diagrams relating the several electrocardiographic deflections with the status of the heart at the time. On the whole, the booklet is recommended.

The Psychoanalytic Study of the Child. Volume II. 1946. An Annual. Managing editors: Anna Freud, Heinz Hartmann, M.D., and Ernst Kris, Ph.D., Cloth. Price, $7.50. Pp. 424. International Universities Press, 227 W. 13th St., New York 11, 1947.

This volume of the annual has five sections devoted respectively to problems of child development, clinical problems, guidance work, problems of education and sociology and history of child psychiatry. Although the annual is written for dynamically trained psychiatrists, this volume contains papers which will be of interest to many physicians who recognize the importance of psychologic and psychiatric difficulties in the child. Pediatricians will find many of the clinical papers rewarding. Anna Freud's contribution "The Psychoanalytic Study of Infantile Feeding Disturbances" is a simple and lucid presentation, which would be intelligible to any pediatrician and contains many helpful suggestions concerning the management of feeding difficulties in infants. The chapter by Dr. Margaret W. Gerard on "The Psychogenic Tic in Ego Development" has fascinating, well presented clinical material which throws light on the genesis of psychosomatic symptoms by a psychologically traumatic experience. Dr. Phyllis Blanchard's contributions to the "Problems of Reading Disabilities" and Dr. Elizabeth R. Geleerd's "Psychoses in Childhood" will be interesting reading for the pediatrician. The other sections of the annual are concerned with more theoretical problems. The chapters on "Twins" by Dorothy T. Burlingham and "The Child's Laughter" by Edith Jacobson are worth the reader's attention. Pediatricians, educators, psychologists and social workers will all find in this annual clinical and theoretical formulations which will enlarge and can be integrated into their own special fields.

L'anesthésie intra-veineuse au pentothal-sodium. Par Ernest Kern. Préface de R. Merle d'Aubigné. Paper. Price, 100 francs. Pp. 93. Masson & Cie, 120 Boulevard Saint-Germain, Paris 6ᵉ, 1946.

This monograph surveys the present status of pentothal sodium for surgical anesthesia. The author became interested in the qualities of the drug while serving with the Allies during the war. His experience covered more than 3,000 persons wounded in battle to whom pentothal sodium was administered. Increasing use of this agent in civilian practice convinces the author that pentothal sodium is a valuable addition to the armamentarium of the French anesthetist. A short history of the intravenous use of barbiturates is given. The physical and chemical properties of pentothal sodium are discussed briefly. A short chapter covers the physiologic effect of the drug. A chapter is given over to the discussion of the complications which follow the use or misuse of pentothal sodium. Two cases are reported in detail. Treatment of complications during or following the use of pentothal sodium is discussed in the same chapter. The clinical uses of pentothal sodium, with suggestions about premedication, dosage and use of oxygen are the subjects of a short chapter. One case is reported. A longer chapter gives the various technics by which pentothal sodium may be used. One case is recorded in which respiratory arrest was overcome with artificial respiration and oxygen insufflation. Greater detail regarding accidents and dosage is included in this chapter. Various combinations of pentothal sodium and inhalation anesthetics are outlined, with a precautionary paragraph on the danger of combining chloroform and pentothal sodium. About a third of the book is given to the discussion of the contraindications for the use of pentothal sodium. Thirty-six cases are reported to illustrate various subjects in this chapter. A comparison of pentothal sodium and hexobarbital soluble (evipal sodium) concludes the text. A short bibliography of references written in French on the subject is followed by a short bibliography of references in English. The book contains no index. Much material is presented in concise form.

School Health Problems. By Laurence B. Chenoweth, A.B., M.D., Professor of Hygiene, University of Cincinnati, and Theodore K. Selkirk, A.B., M.D., Assistant Professor of Clinical Pediatrics, College of Medicine, University of Cincinnati. With an Outline on School Health Administration. By Richard Arthur Bolt, M.D., Dr.P.H. Third edition. Cloth. Price, $3. Pp. 419, with 116 illustrations. F. S. Crofts & Co., 101 5th Ave., New York 3, 1947.

Though the same general plan has been followed in this edition as in the previous editions of this useful little volume, all the material has obviously been thoroughly revised and brought up to date. Both sides of controversial issues are fairly represented, and the reader is permitted to make his own choice. The thesis that "the major objective of all medical service in the school is educational" is presented and well supported. Though the reader might be inclined to question the author's acceptance of foot baths for controlling ringworm infection of the feet and to have some reservations as to the recommendations related to schoolroom illumination, he finds the answers here suggested for school health problems to be generally sound, well considered and in line with the best of modern medical thought. The illustrations leave something to be desired, and the explanation of the Wetzel grid method for evaluating physical fitness is definitely not clear. In general, however, the facts are represented accurately, interestingly and fairly, and the volume is highly recommended for all physicians doing any work in the schools.

Vascular Disorders of the Limbs Described for Practitioners and Students. By Sir Thomas Lewis, C.B.E., F.R.S., M.D., Physician in Charge of Department of Clinical Research, University College Hospital, London. Second edition. Cloth. Price, $2.25. Pp. 118, with 5 illustrations. Macmillan & Co., Ltd., 60 Fifth Ave., New York 11; 10 St. Martin's St., Leicester Sq., London, W. C. 2, 1946.

This volume, by a recognized authority on the physiology of the peripheral circulation, is not a complete treatise on peripheral vascular diseases. Conspicuous by its absence is consideration of such diseases as venous thrombosis, aneurysm and periarteritis nodosa. The anticoagulants heparin and dicumarol are not discussed. In general, clinical description of diseases is brief and inadequate. Treatment is lightly presented. As an example, one page is devoted to the treatment of arterial embolism and thrombosis; about three fourths of this is discussion of embolectomy. There is no bibliography or photographs. Because of these deficiencies the book has no great value for practitioners; the title is somewhat deceptive. However, the volume has great value for the student and the curious; it is essentially a consideration of physiology. There is excellent presentation of the causes of various colors of the skin which are circulatory in origin. The effects of arrest of arterial circulation are discussed thoroughly. The chapters on vasoconstriction, local arterial spasm, Raynaud's disease, Raynaud's phenomenon and vasodilatation will be helpful to the student of physiologic disturbances of the peripheral circulation. The volume is highly recommended from the point of view of presentation of fundamental studies in physiology by the author and his students.

A Program for Hospitals of the Pittsburgh Area Based on a Study of Voluntary Hospitals in Allegheny County and Adjacent Counties. By Abraham Oseroff. Sponsored by the Hospital Council of Western Pennsylvania. Paper. Pp. 38, with 2 illustrations. The Council, 814 Farmers Bank Bldg., Pittsburgh 22, 1947.

This pamphlet summarizes a study of the voluntary hospitals in a ten county area surrounding the metropolitan center of Pittsburgh. The survey, sponsored by the Hospital Council of Western Pennsylvania, is concerned mainly with hospital needs, the distribution of existing facilities, the financial picture of hospitals in this area, the current program of hospital activities and estimates of future expansions in the scope of hospital service. It is anticipated that a further report will be made on a larger study that has been carried out on all voluntary hospitals in western Pennsylvania.

Trauma in Internal Diseases: With Consideration of Experimental Pathology and Medicolegal Aspects. By Rudolf A. Stern, M.D. Foreword by Francis Carter Wood, M.D., Director of Laboratories and Radiotherapy Department, St. Luke's Hospital, New York. Cloth. Price, $6.75. Pp. 575. Grune & Stratton, 44 Fourth Ave., New York 16, 1945.

The author has assembled a series of case histories, some with exhaustive postmortem findings, reflecting the causal relationship or lack of such relationship between nonperforating trauma and internal diseases. The scientific literature is subjected to a critical review, and there is presented a description of experimental work which has either confirmed or refuted the assumption of trauma as an etiologic factor for many internal diseases. The book should be of aid to physicians in the medical evaluation of cases that involve disability or compensation claims based on internal lesions due directly or indirectly to extrinsic injury.

Health Facts for College Students: A Textbook of Individual and Community Health. By Maude Lee Etheredge, M.D., D.P.H. Fifth edition. Cloth. Price $2.50. Pp. 439, with 75 illustrations. W. B. Saunders Co., West Washington Square, Philadelphia 5, 1947.

This edition is interestingly written and well organized. The text appears to be up to date in every respect. Though the table of contents would seem to indicate a rather limited inclusion of materials on community health, much of such material has been integrated throughout the volume.

Adding to the usefulness of the book are the questions for class discussion at the end of each chapter and the bibliography and film bibliography at the end of the book. The illustrations are adequate but are not quite up to the general excellence of the text. The new edition should find wide acceptance among college teachers of hygiene.

Queries and Minor Notes

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically stated in the reply. Anonymous communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

PREVALENCE OF VENERIAL DISEASES

To the Editor:—Can you advise me, or can you refer me to publications containing statistics on the percentage of the total adult population in the United States who have or have had some form of venereal disease, together with breakdown of these figures, i. e., white persons and Negroes, males and females, age groups, forms of venereal disease, and percentages as to sections of the country as a whole. I should also like to know what the percentage of decline in the venereal disease rate is today as compared with the rate, say, of ten years ago.

George J. Korby, M.D., Detroit.

Answer.—The percentage of the total adult population in the United States who have or have had some form of venereal disease is not definitely known. Morbidity reports for the several venereal diseases are unreliable for a number of reasons, chief among which are (1) the fact that many people with venereal disease, particularly gonorrhea, do not seek treatment and (2) physicians in private practice often do not submit morbidity reports on venereal disease patients because of social implications.

The best estimate available on the prevalence of venereal disease is limited to syphilis. Studies of selectees during the mobilization period prior to World War II together with earlier studies of other groups by the Public Health Service give the best information available. Most of these studies were published during the years 1938 to 1942 in The Journal and in *Venereal Disease Information.* Depending on the geographic location, from 2 to 5 per cent of the adult population of the country have syphilis at any one time; the average would probably be about 3 per cent. Acquired syphilis occurs two to three times as often in men as in women and is about two to eight times as common in the Negro as in the white person. It is interesting that in the Negro the availability of free clinics seems to have a direct influence on prevalence. Syphilis is most frequently acquired by women between the ages of 16 and 20 and by men between the ages of 21 and 25. The higher prevalence of syphilis, according to these studies, is in the Southeastern states and the states along the Mexican border.

Because of the lack of information on the prevalence of venereal disease there is only limited information available regarding the decline in venereal disease rates. For further information on this subject reference is made to chapter 14 of the book "The Control of Venereal Disease" by R. A. Vonderlehr and J. R. Heller Jr. published by Reynal and Hitchcock, New York, 1946.

BLOOD CALCIUM DETIRMINATIONS

To the Editor:—My laboratory is having great difficulty in getting accurate results with our blood calcium determinations. We are using the method of Roe and Kahn (*J. Biol. Chem.* **81:** 1 [Jan.] 1929). It is both time consuming and inaccurate. I would appreciate it if you could advise me on any other photoelectric determination or any other means which would simplify our procedures. The other laboratories in town are having similar difficulties, and some are refusing to make blood calcium tests for this reason.

Albert I. Clark, M.D., Shreveport, La.

Answer.—Calcium determinations as performed in many clinical laboratories are not reliable, as any method requires the utmost care, with attention given to details of every step in the technic. A method that may be of interest to the inquirer is that of Sendroy (Sendroy, Julius, Jr.: Photoelectric Determination of Oxalic Acid and Calcium, and Its Application to Micro- and Ultramicroanalysis of Serum, *J. Biol. Chem.* **144:**243 [June] 1942). Calcium is directly precipitated as calcium oxalate and measured by the extent of its reduction of a constant amount of ceric sulfate. The author claims that the sensitive photoelectric technic of iodometry employed has an average error of ±2 per cent in the measurement of as little as 0.002 mg. of calcium or 0.02 mg. of serum.

In many laboratories the method that is still preferred is some modification of Tisdall's titration method, such as that of Clark and Collip (Clark, E. P., and Collip, J. B.: A Study of the Tisdall Method for the Determination of Blood Serum Calcium with a Suggested Modification, *ibid.,* **63:**461 [March] 1925).

PSORIASIS OF THE NAILS

To the Editor:—I should like an evaluation of the forms of treatment for psoriasis of the fingernails. A man aged 32 has had a moderately severe psoriatic involvement of the fingernails for six years. The condition has become worse in the past eighteen months, so that now there is a constant, ugly appearance to three or four nails owing to cutting away the dead portions of the nails plus removal of the detritus and, in conjunction with the discoloration, looseness and sponginess of the ungual wall over the nail root. Do you think that this pink spongy tissue over the nail root might promote rheumatoid arthritis by serving as a chronic source of mild infection? The patient is a professional man and must meet many people each day. Please discuss the advisability of removing the severely affected nails, scraping the nail beds and wearing artificial nails. This would be a nuisance but may become necessary. X-ray therapy has not been used and does not seem to me to be advisable.

M.D., California.

Answer.—The inquirer does not state whether the nails alone are involved or changes in the skin are present too. The diagnosis of psoriasis of the nails alone is often difficult to make with certainty. Other diseases must be considered. In acrodermatitis continua, changes in the skin begin near the nails and the latter may be involved early. There may be rheumatoid disorders of the small joints just as there may be in psoriasis, especially of the arthropathic variety. It is implied that in this patient there are rheumatoid symptoms. It is not necessary to assume that the pathologic tissue about the nail acts as a nidus for the dissemination of noxae to produce rheumatoid changes. There is no assurance that trimming away such tissue will contribute toward better, or in itself quicken, healing.

Psoriasis of the nails frequently resists all treatment, especially when they alone are involved. The simplest and most effective remedy is the use of x-rays. This form of physical therapy requires knowledge of its proper use, experience and utmost care to prevent harm. The method is most apt to improve the state of the periungual tissues. The use of reducing agents such as anthralin ointment and chrysarobin may be effective. They may be applied under finger cots. If the skin is involved too, it also must be treated. Attention only to the nails with neglect of psoriasis of the skin lead to poorer results and more frequent recurrences in those appendages. It is not advisable to resort to surgical methods until all others are exhausted. It is unusual to find that removal of the nails or scraping leads to any permanent improvement. Quick relapse is common.

UNILATERAL BREAST HYPERTROPHY

To the Editor:—I have a patient aged 14, one of whose breasts is developing much more rapidly than the other. There is nothing to suggest tumor formation. How common is such a condition? Is there any method of treatment? What prognosis can be given as to the eventual comparative size of the two breasts?

M.D., New York.

Answer.—Two separate conditions in early adolescence may be responsible for unequal development resulting in mammary asymmetry. The most common is known as "early ripening," or so-called adolescent mastitis. In this condition the hypersensitive breast develops earlier and to a greater degree than its fellow. Once regular menstruation is established and sexual maturity is reached, the overdeveloped breast usually regresses until the two breasts are approximately the same size. Early ripening is a relatively common condition and does not require treatment. The prognosis for eventual symmetry is good. A second cause of mammary asymmetry is unilateral virginal hypertrophy. This is a relative rare condition in which the larger breast grows until it reaches a giant or abnormal size, being twice or more the volume of the normal breast. There is no treatment for this unilateral virginal hypertrophy until the maximum size of growth has been reached. Then plastic operation is indicated to reduce the abnormality in size.

NERVE CRUSHING OPERATION FOR POLIOMYELITIC PARALYSIS

To the Editor.—I am inquiring about the Billig-von Harreveld treatment for residual paralysis. As I understand it this treatment is given at the St. Luke's and Children's Medical Center, Philadelphia. Would you write me the details of this treatment? Is the treatment given at the University of Virginia Medical School?

A. W. Graves V, M.D., Lacey Spring, Va.

Answer.—The Billig-van Harreveld procedure for treatment of infantile paralysis is a manual operation to interrupt the remaining intact motor nerve fibers of a paretic muscle. The success of such a procedure is based on the possibility that the interrupted nerve fibers will branch during regeneration, thereby providing an increased number of nerve fibers to innervate muscle cells.